FEBRUARY, 1935

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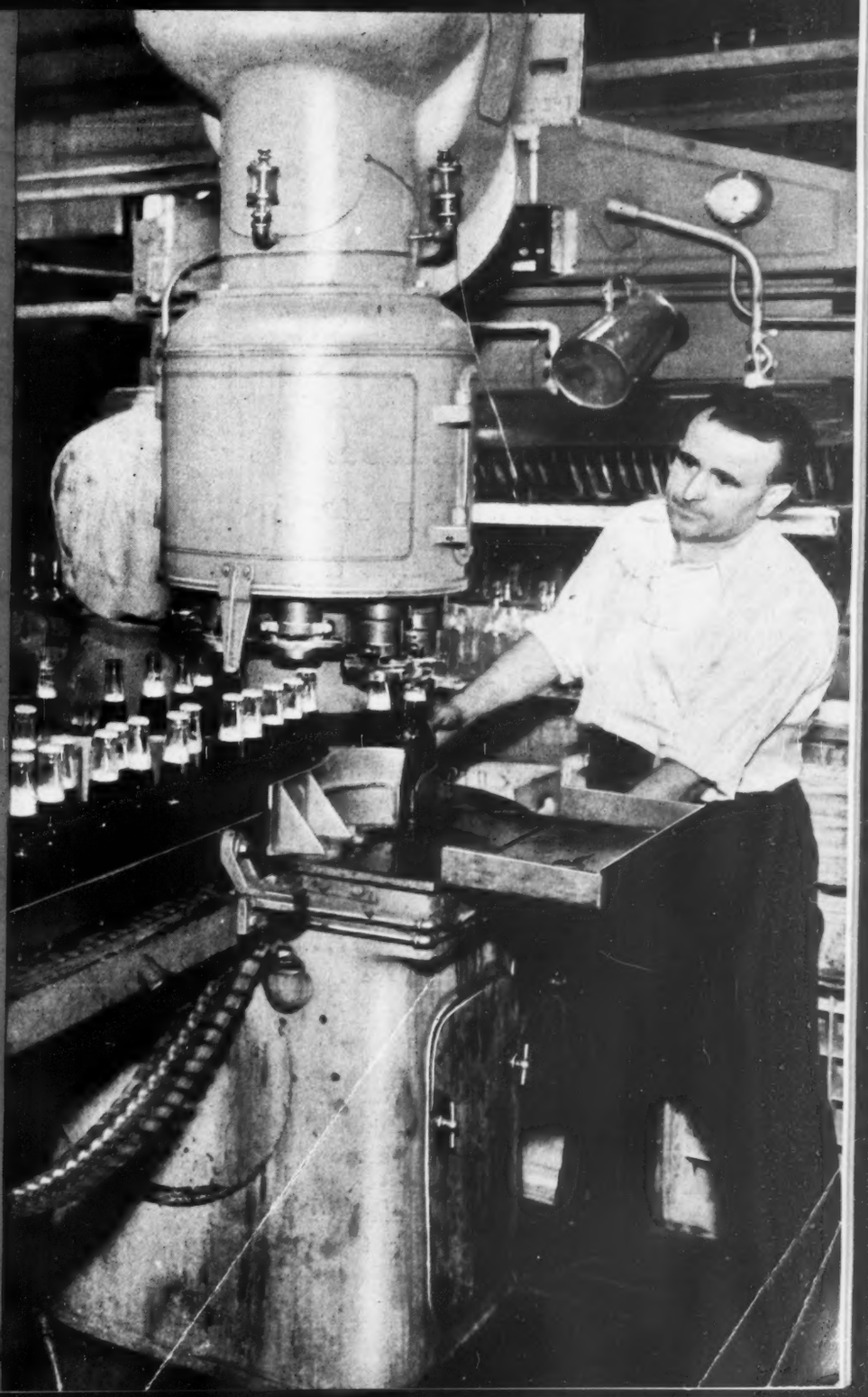
FOOD INDUSTRIES



- BAKERY PRODUCTS
- BEVERAGES
- CANNED AND PRESERVED FOODS
- CONFECTIONERY AND CHOCOLATE
- DAIRY PRODUCTS AND ICE CREAM
- FATS AND OILS
- FLOUR AND CEREAL PRODUCTS
- MEATS AND MEAT PRODUCTS
- OTHER FOODS AND SPECIALTIES

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When staying up in the air

1 HOUR AND 5 MINUTES

broke ALL endurance flight records

...Armstrong had already installed corkboard insulation that's protecting cold rooms to this day!

ON SEPTEMBER 10, 1908, *in the course of official government tests at Fort Meyer, Va., Orville Wright smashed the then world's endurance flight record by staying in the air 1 hour and 5 minutes.*

●

LEFT—*This storage room in the plant of the Philadelphia Dairy Products Company, Burdan Division, Pottstown, Pa., insulated in* 1908, *still is serving efficiently today.*

FOR MORE THAN thirty years, *Armstrong's Corkboard* has been breaking records for performance! In countless installations, it has definitely proved its ability to withstand the constant destructive effects of moisture and extreme low temperature more successfully than any other insulation. The ice cream storage room in the plant of the Philadelphia Dairy Products Company, Inc., Burdan Division, of Pottstown, Pa., shown above, was insulated with corkboard as long ago as 1908. And today, this efficient insulation still is in constant use, paying extra dividends in refrigeration savings.

The reason for the *continued* efficiency of corkboard lies in the natural physical structure of cork itself. Viewed under a microscope, cork shows millions of tiny cells. Entrapped in each cell is a minute quantity of still air—the best barrier to the passage of heat known, save a vacuum. In the making of Armstrong's Corkboard, clean, pure granules of this non-conducting cork are used. And improvements in corkboard manufacture during the past three decades have made the Armstrong's Corkboard you install *now* even more dependable than that which has served so satisfactorily in thousands of plants.

We believe you'll agree that it is to your very best interest to rely on Armstrong's Corkboard for your low temperature rooms. Armstrong engineers will gladly consult with you at any time in regard to your insulation problems. No obligation. If you wish to have a representative call—or if you desire further information — write to Armstrong Cork Products Co., Insulation Division, 948 Concord Street, Lancaster, Pa.

Armstrong's CORKBOARD INSULATION

for all cold rooms

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FOOD INDUSTRIES

PRODUCTION • ENGINEERING • DISTRIBUTION

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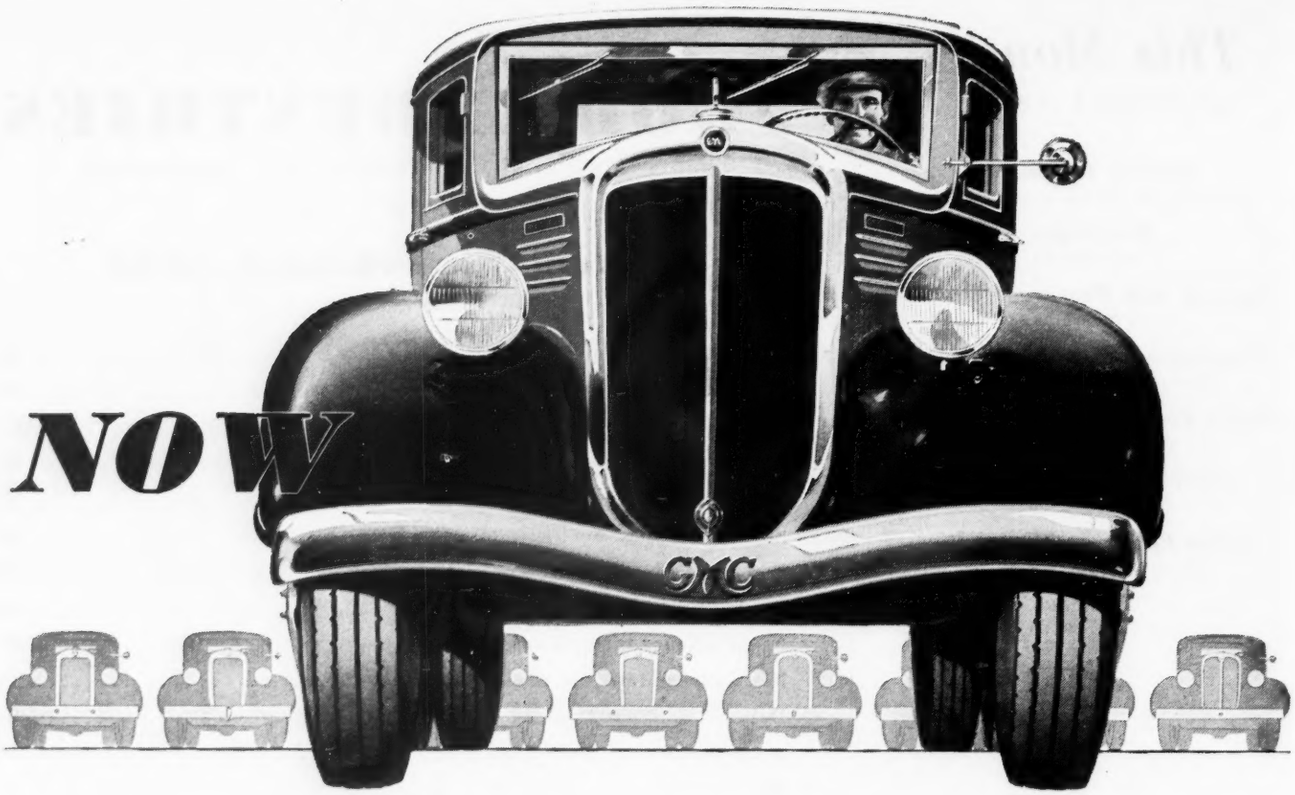

–out ahead with a wider lead than ever!

*Important 1935 improvements, including HYDRAULIC BRAKES, assure better performance and greater earnings for GMC truck buyers

ON THE BASIS of comparative specifications or that of work done and profits earned, cold logic on the one hand and actual facts on the other have proved that General Motors Trucks challenge the entire field. Improvements, gradual and unheralded, have won for every unit in the entire line the confidence of an ever-increasing number of shrewd business men who judge truck value by the only sound yardstick, that of "earning ability" per dollar invested.

Now, at the start of 1935, important improvements, such as those listed below, assure still better performance, still greater economy, the ability to out-perform and the ability to out-earn in a more pronounced way than ever before.

More and more thousands of profit-minded truck buyers are swinging to General Motors Trucks. Even in the intensely competitive low-priced 1½-ton field of usage, shrewd buyers are proving daily that it pays to invest a few dollars more for the quality-built, all-feature 1½-ton to 2-ton GMC T-16.

A phone call to your nearest General Motors branch, distributor or dealer will bring you the bedrock facts. Representative models of the 1935 GMC line are now on display.

***NOTEWORTHY 1935 IMPROVEMENTS:**

Hydraulic brakes standard on all light and medium-duty models; centrifuse or cast nickel iron brake drums; exceptionally large braking surfaces; increased fuel economy; increased power; increased torque; dual-performance rear axle available in 2-3 ton range; finer appearance—sloping radiator, skirted fenders, fender-mounted headlamps, drop-skirted cabs, horizontal louvres and optional group of de luxe equipment (at slight extra cost).

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FOOD INDUSTRIES

PRODUCTION • ENGINEERING • DISTRIBUTION

Established 1928—McGraw-Hill Publishing Company, Inc.

Vol. 7, No. 2

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Laurence V. Burton, Editor

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FEBRUARY 1935

THE TALK OF THE INDUSTRY

CONVENTION NOTE: The pickles served at the Stevens Hotel in Chicago leave us with a firm conviction that somebody is falling down on the job. We hope we are treading on somebody's toes. Also we'd like to know how such pickles

are made so that we can pass the word along as a good method to avoid. The question was put up to a well-known pickle packer who lunched there with us. He suggested that possibly it might be done by putting a barrel of salt stock beside a barrel of vinegar in a cellar for thirty days, and then adding a quart of the vinegar to the pickles. The sugar would, of course, be kept in the next room, unopened.

IF YOU want to read some further choice bits about how not to do things, look up the September Notices of Judgment under the Food and Drugs Act. Take No. 22042, for instance, which involved a shipment of butter "that contained maggots, mold, straw and other extraneous material"; or No. 22043 "that contained rodent hair, mold fiber"; or No. 22045 "which contained rodent hairs, insects and parts of their bodies."

These lots of butter originated in the deep South. Their inexcusably bad quality is, technically speaking, adulteration. But, practically speaking, the trouble is caused by ignorance of how to procure good raw material, how to process it properly, how to care for the finished goods, and complete ignorance of common decency.

FOR the benefit of those who depend on these pages of sagacious comment we must confess that the Gold Clause cases now before the U. S. Supreme Court find us in an awkward position. In fact, we suspect that nearly all conservative business men are in the same predicament. Our difficulty lies in the fact that we hope the New Deal wins on this point, which is quite in contrast to much of our previous critical attitude.

It is not necessary for us laymen to take a recess to make up our minds. What we want is stability. Business has now adapted itself to the devalued currency and the abrogation of gold clauses. It is better that way than to inflict the nation with another case of big jitters.

Of course it is inevitable that a certain amount of indecision must develop while industry awaits the Supreme Court verdict. Importers and exporters have the only justi-

fiable basis for awaiting future events. Those who do business on a purely domestic basis have no reason, other than fear of the dark, for hesitation. For, even if the gold clauses are reinstated, there are so many ways of quickly correcting any possible situation that no one need fear the outcome.

TRAVELING to a convention on a special train saves everybody a great deal of time. Everybody knows everybody else, even on the ten-car Food Industries Special which the New York Central operated from New York to the Canners Conven-

tion in Chicago. This gives everyone a chance to get into good form in handshaking and saves 224 repetitions of that perennial question at all conventions, "When did you get in?" In fact, judging by the restrictions placed upon membership in the party, it created a new question, "How did you get in?" That, of course, necessitates a trip to the forward end of the club car, and thus the convention is off to a good start.

THE Supreme Court of the United States must be growing more liberal than political and legal critics usually regard it. Fancy that august body employing the slang phrase "Hot Oil" in handing down one of the most important legal decisions of our times!

Everybody has felt much relieved that the first test of the brakes on our political vehicle called the New Deal shows that they are in good working order. Furthermore, most of us feel that the decision ought to

have the salutary effect of warning our Congressional representatives that they were hired to work and not to pass the buck. But look at the way Congress is proposing to delegate authority to the President under the $4,000,000,000 Relief Bill. Some folks never learn.

Facts About Your Business

STATISTICS are often called "cold" and "impersonal." Perhaps it is true. It all seems to depend on the point of view. And of course, the point of view depends on the kind of job you hold down—or where your money is tied up.

Before a man is old enough to make a few investments he usually thinks that there is nothing so uninteresting as those daily statistics known as stock market quotations. Statistics, however, are very important and tremendously interesting to the chap who knows how to use them.

Our chief complaint today is that our passion for facts has to be curtailed to only eight pages of data in this issue of FOOD INDUSTRIES which, for purposes of identification, is called a statistical number. No more Census of Manufactures data will be available until about two years hence. Better save this issue until 1937.

Metal Contamination

THE next big drive of the Food and Drug Administration in the food field is to be against metal contamination of foods and beverages. Spray residues continue the major active salient of the offensive, but new drives are expected elsewhere. Lead foil is likely to be one of the first sources of alleged contamination to be investigated.

Cæsar's wife was no more importantly concerned with the *appearance* of purity than our manufactured foods today. Even the element of suspicion may be turned by investigation, or possibly overzealous administration, into real business hazards. Every food executive must, therefore, study every product which he makes, even such seemingly harmless products as tea wrapped in lead foil.

The most sensitive methods for detection of metal in food have been developed by the Department and are going to be applied by inspectors. It is not the part of wisdom to wait for someone else to find these troubles for you. Your own laboratory should do it first. Then correction of difficulties discovered can anticipate —and preclude—official action.

Limits of tolerance of insecticide residues on fruits in 1935, announced January 25, follow: Lead, 0.018 grain per lb. (reduced from 0.019); arsenic trioxide, 0.01 grain per lb.; fluorine, 0.01 grain per lb. of fruit.

Labor Legislation

INDUSTRY may as well prepare itself for another attack of laboritis. Senator Black is back again with his 30-hour week, which he and Representative Connery will attempt to put into legislation. Organized labor will lend strong vocal support to this move, if for no other reason than it can use it in bargaining for some other measure, such as the strengthing of Section 7(a). Visualize what this short work-week would do in terms of increased cost to all industry, then multiply this by two, and you will have some idea of what would happen to seasonal industries such as canning. Nor is the 30-hour week the only labor headache. Old-age pensions and unemployment reserve plans will be much discussed. But from a theoretical viewpoint, at least, the latter are praiseworthy.

Good Name a Liability

WHAT is the worth of a good name and a good reputation? Its value cannot be calculated, you say?

But it can become a liability, and it is one in New York State today. The Milk Control Board has said, by its decision, that advertised brands of milk shall be sold at one cent a quart higher than the prices of non-advertised brands. It is a plain case of compulsory price-cutting.

As soon as one applies a little reasoning to the situation it becomes ridiculous. For months the state of New York has been advertising milk as a commodity and urging people to drink more milk. Any practical business man in the dairy business knows that volume increases markedly with any price reduction, and vice versa. Yet this same state through another agency rules that the price of advertised brands of milk must be higher by one cent than unadvertised brands. It doesn't make good sense.

Social Insurance

SOCIAL legislation is coming in 1935. Executives must face it as a fact, not as a possibility. Nobody understands it very well, but the will of the country is to give it a try. The best policy is not to oppose it but try

Hors d'Oeuvres

• If it's unusual foods you like, try this—an egg cooked on the inside but raw on the outside. It can't be done? The French did it—with a short-wave radio transmitter.

• *Before you get to the statistical section, we ought to tell you that our illustrious charter of trends neglected to include figures showing how much pork, beef, wheat and corn was not produced.*

• Destructive price cutting defined: Stealing an order away from a member of the code authority.

• *News from China says the price of grade A pasteurized milk in Shanghai has been reduced by 25c. on the quart. And still the dairy gets 45c. for it. Clever people, these Chinese!*

• The noise made by weevils working in wheat has been made audible by a device that amplifies sound ten thousand billion times. Is it practical? Well, think what Walter Winchell could do with it.

• *California vintners hope soon to see their wine recognized as a food. But wouldn't it be a good idea to get it recognized as a beverage first?*

• A high-speed camera reveals that the clam's mouth is lined with cilia, or living "hairs," which whip to and fro in a split-second cycle to fan water and floating food into the clam's mouth. Who says our factories have modern methods of materials handling?

• *Lobsters can be made to grow ten sets of claws a year if the claws are torn off at the right times, according to Dr. Hugh H. Darby of the Carnegie Institute of Washington. Fisheries ought to hire a staff of expert lobster-claw tearer-offers and boost production.*

HAS RICE MILLERS ON CARPET

C. G. Miller, chief of the AAA rice section, is conductiong an investigation into complaints that millers are charging exorbitant prices for cleaning, storing, and processing rough rice. He called producers and millers together at a hearing in Washington, Jan. 21, in an effort to dig out the truth. Mr. Miller recently denied a processing tax would be placed upon rice in the near future.

to guide and control it on practical lines.

In the long run it simply means that government and industry must save for the individual against the rainy day. We believe this to be true, despite the fact that many of the schemes plan to impose the tax solely on the manufacturer. As we see it, that idea is about as nearly impossible as it is to soak the consumer with the processing tax on perishables.

How Come?

IMAGINE our surprise when the executive of a brewing company which sells both draft and bottled beer spoke very skeptically of those beer "experts" who profess to know bottled beer by its "cooked" taste. Come to think of it, wort used in brewing any kind of beer is heated considerably above any pasteurizing temperature. In fact, it is boiled for a long time. Therefore how can the relatively low temperature of pasteurization give beer a "cooked" taste when properly used? Perhaps some heat technologist will explain.

Problems

SPEAKING of statistics, how do you answer this one? It took 4,309 lb. of milk to buy an average cow in 1933. In 1934 it took only 4,178 lb. of milk to buy an average critter in a corresponding period. This means that cows are cheaper in terms of milk. But cows cost more in terms of dollars. So what?

And here is something else to think about. Of the total milk produced in the United States, 40 per cent of it goes into butter production. Average per capita butter consumption in this country is 17.8 lb.; in Canada it is 30.47 lb. Evidently we have something of a market for butter here at home.

Food Law Revision

NEXT to the Gold Clause decision the biggest thing pending in Washington in the immediate future for food manufacturers is the revision of the Food and Drug Law.

Executives in the food industry should send to their Senators for copies of the bill and formulate carefully the amendments which the Copeland bill may need. No useful purpose will be served by fighting the bill as a whole.

The moves that are taking place behind the scenes are interesting and important to keep in mind for one who wants to understand and correctly interpret current events. The biggest thing is that Undersecretary Tugwell has definitely changed his attitude from one of demands, such as were seen last year, to one of advisory capacity this session. He has intimated that the Copeland bill is about the best (from his viewpoint) that he can hope for. In fact the Professor is right well pleased that the Copeland bill goes as far as it does in meeting his views. Right now he is a bit worried that the Senator may have to make some concessions to get it through.

This does not mean that Tugwell is giving up the fight to get canned foods quality standards and "voluntary" inspection into the bill, however. The undersecretary realizes that Copeland has gone about as far in meeting his views as he will and, because the Administration did not aid the Senator in his last campaign for re-election, they cannot turn the heat on him. It is hinted that efforts will be made to induce A.&P. to go before Congressional hearings on the Copeland bill and ask for government quality grades. The A.A.A. crowd, the Bureau of Home Economics and the B.A.E. are rather inordinately pleased over the break that A.&P. has made from the rest of the corporate chains, although A.&P. cooperation with the government seems to consist only in printing a month's supply of labels. Apparently none have been put on the market yet.

If the Tugwell adherents can have their way and get "voluntary" inspection into the bill, it is their plan to make government quality grading a requirement for certification under inspection. Should this maneuver fail, an effort will be made to bring canners under the existing B.A.E. voluntary inspection with compulsory quality grades, *a la* A. B. C., as a requirement for certification. And A.&P. is to be the bellwether if it can be induced to function in that capacity.

The President's middle-of-the-road strategy seems to have permeated the thinking of the New Dealers in the Department of Agriculture to an amazing degree. It will be recalled that he always fosters the growth of an extreme opposition group so that he can take a position mid-way between the extremists—a method of procedure that many a wise head declares is playing with fire. However, living in this atmosphere of political jockeying had led some of the New Dealers to examine the motives of everyone to detect similar strategy. And now they have evolved a highly entertaining explanation of the McCarran bill.

They think that industry, while satisfied with the Copeland bill, has brought out a weaker bill, S.580, with the idea of making any Tugwell sug-

TO PILOT CANNERS

Howard A. Orr has been chosen by members of National Canners Association to head up their organization this year. In ordinary business life, he is president of Winorr Canning Co., Circleville, Ohio.

gestions look entirely too stringent. They further think that it is industry's plan, after insisting on the McCarran bill, that industry will appear to be making a great concession by compromising on the Copeland bill as against any more stringent suggestions the Professor might make.

Important to keep in mind is the fact that officials of the Food and Drug Administration aided in the drafting of the Copeland measure. Therefore S.5 presumably meets the views of the progressive elements of the Food and Drug Administration even if it does not go far enough to meet the views of the "young liberals."

Losing Money

WHEN business is bad most manufacturers use only their best, newest, low-cost production equipment. Suppose, however, that taking on additional volume requires bringing into use some obsolete equipment that can produce only at higher costs. It may be a losing proposition to operate it at the same selling price. Cases have been known where a plant made a little money on small volume but lost money on larger volume just because costs went up.

Accountants are often accepted by production men as necessary evils. But it does pay to listen to the accounting department on what seems to be a production problem. If new business is to be accepted and the accounting department is any good at all it should be able to tell whether the business will be profitable.

Cost of Deferred Purchases

DURING 1935 you will hear much about the need for reviving the durable goods industry, in which the problem of unemployment is still greatest. When things were at their very worst the activity in those industries went down to about 20 per cent of normal.

As their name implies, durable goods are the things of enduring nature in the form of consumer durable goods, like houses; public durable goods, like pavements, sewer systems and buildings that belong to everybody; and the so-called capital goods that are used in production. The industries producing capital goods have been hit the hardest of all.

Until there is a revival of business in these groups, particularly in the last, there can be no real economic recovery.

No business man ever spends money to be a good fellow, although he may donate generously as a voluntary act or involuntarily via the tax collector. The important thing to remember is that either money has got to be raised for relief purposes or there must come about recovery in the durable goods industry. The money has got to be spent somehow.

A hundred dollars spent for durable goods creates more employment than $100 given to direct relief or to charity or taxes.

Deferring purchases of equipment when such a purchase is a good investment or is actually needed simply means prolonging the depression. Deferring *needed purchases* only insures paying twice: once for relief taxation, and again for the item when it is actually purchased.

Voice

THE Communistic *Daily Worker*, on Jan. 5, refers to FOOD INDUSTRIES as the "voice of the big manufacturers of food products." And all along we thought we were running an independent publication!

Label Fight Continues

ANOTHER month has come and gone without seeing any definite action on the informative labeling of canned foods. And the same old arguments continue to be bandied back and forth between canners and "professional" consumers. Early last month, the NRA Consumers' Advisory Board recommended that Administrator Armin W. Riley take action to make effective at once the grade system of labeling. This recommendation was based upon an investigation of the Canadian grade labeling program, from which the consumers group was able to obtain "evidence" backing up the arguments it has presented all along. In brief, it finds the grade labeling system as demonstrated for 16 years in Canada to be of great value to consumers and to be no impediment to the canning industry. In fact, it says the Canadian canners would set up a howl if grade labeling were abolished.

On the heels of this plea of the consumers group, the NRA Industrial Advisory Board asked that Mr. Riley do exactly the opposite. I. A. B. wants to put into effect immediately descriptive labeling. It, too, takes the Canadian system as its text and finds that grade labeling not only is of negligible value to the consumer, but that it would throw a monkey wrench into the works of the canning industry.

We do not know what will come of all this, but something better be done quickly or no new labeling program will be in operation for another year.

MINNESOTA PUTS ONE OVER ON FRANCE

Ten thousand pounds of Roquefort-like cheese was ripened in this cave last year. And there are enough caves like it along the Mississippi near Minneapolis and St. Paul to produce all the Roquefort-type cheese consumed in the United States. Made from cow's milk, the product allegedly rivals the French product in quality. It is a development of the University of Minnesota. (In France, the law requires that this type of cheese be labeled as Frommage Bleu [Blue cheese], not as Roquefort.)

MEN OF THE MONTH

ROBERT H. CABELL, made general manager of Armour & Co. two months ago, was elected president of the company Jan. 25.

F. A. CARROLL, Pittsfield, Mass., has been elected president of New England Association of Ice Cream Manufacturers.

W. S. CLITHERO, vice-president of Armour & Co., Chicago, has been appointed general provision manager of the company and will be in charge of hog buying, pork-cutting and production. He will be assisted by F. P. CAPERA.

J. W. CRAWFORD was elected president of Ozark Canners' Association at the annual meeting last month. W. M. WILKERSON was named vice-president and J. P. HARRIS was reelected secretary for the 21st time.

DR. CLARK E. DAVIS, who was appointed director of research and sales promotion of Virginia Dare Extract Co., Brooklyn, N. Y., only last September, has advanced to the position of vice-president.

GEORGE H. EARLE has resigned as vice-president and director of Pennsylvania Sugar Refinery Co. that he may devote all his time to his new job, Governor of Pennsylvania.

A. L. EBERHART is the new general manager of Arnold Bros., Inc., Chicago. He formerly was with Jacob Dold Packing Co.

JOSEPH M. EMMART, who founded Emmart Co., recently established a new business, the Clifton Meat Co., at Louisville.

G. E. HALL, who represents Curtiss Candy Co. in Dayton, Ohio, has been elected president of the Buckeye Candy Club.

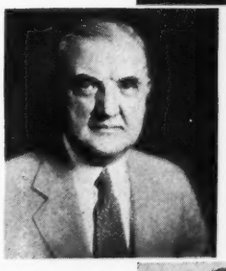
PHILIP L. HARRIS, research assistant in agricultural and biological chemistry, Pennsylvania State College, has joined the research staff of United Fruit Co., New York.

GEORGE W. HEADLEY, a chocolate production expert who had been with Loft, Inc., Long Island City, N. Y., for 16 years, has taken a position with E. J. Brach & Sons, Chicago, and is in charge of chocolate manufacture.

MAJOR S. HOWE, formerly superintendent of Hecker-Jones-Jewell Milling Co., Buffalo, and for the past two years with Buckeye Cereal Co., Massillon, Ohio, became general superintendent of Niagara Falls Milling Co., Lockport, N. Y., Jan. 1.

Robert H. Cabell

Dr. Clark E. Davis



W. S. Clithero

Corwin Wickersham

E. E. HUGHES of Armour & Co., Chicago, was chosen by members of Evaporated Milk Association to head the organization for the coming year. The other officers are M. MOORE, Wilson Milk Co., Indianapolis, vice-chairman; E. ANNELL, Oatman Condensed Milk Co., Dundee, Ill., treasurer; DR. FRANK RICE, secretary.

H. J. JACOBS, formerly a chemist with Imperial Sugar, Inc., is now superintendent of sugar manufacturing with Southcoast Co., Houma, La.

W. R. KELLER, superintendent of Pillsbury Flour Mills Co., Buffalo, has taken indefinite leave of absence because of ill health and is succeeded by R. G. Bullock, formerly at Atchison, Kan.

W. M. KRAFFT, of Meinrath Brokerage Co., was elected president of the Candy Production Club of Chicago, Jan. 7.

J. J. MACK, a former Best Foods executive, has organized Dated Mayonnaise Co., Inc., Los Angeles.

FRANK R. MOORE has been promoted from sales manager in charge of milk for Moores & Ross, Columbus, Ohio, to general manager of Dairy Products Corp., Dayton, a Borden unit.

J. R. MOULDER has been made a vice-president of Kraft-Phenix Cheese Corp., Chicago. He is in charge of bulk sales. Other new vice-presidents are G. C. POUND, in charge of mayonnaise and salad dressing sales, and HARRY BAUER, manager of the Eastern division.

J. P. MURPHY, Omaha, recently was elected president of Lincoln (Neb.) Packing Co.

W. H. SAPP has been made general manager of the Chicago plant of Armour & Co. to succeed T. J. Dee, who now manages the Oklahoma City plant. The former Oklahoma City manager, F. P. CAPERA, has been named assistant to W. S. CLITHERO, general provision manager, Chicago.

STANTON E. SHELA has been re-elected president and general manager of Ohio Valley Coffee Co., Portsmouth.

FRED G. STRITZINGER, 3rd, has been made New England manager for Continental Baking Co. J. J. STRITZINGER succeeds him at the Dorchester plant.

ROBERT E. WEAVER has been re-elected president of Pennsylvania Bakers' Association. He is treasurer of William Friehofer Baking Co.

GEORGE R. WEBBER, for the past four years manager of Chase & Sanborn's coffee plant at Hoboken, N. J., has been appointed general manager of the package development department of Standard Brands, Inc. GEORGE G. GUNDERNSEN, formerly superintendent at Hoboken, now manages this plant.

DAVID G. WHITE, former sales manager of Manhattan Coffee & Sugar Co., Long Island City, N. Y., has gone to Jerusalem to establish a complete coffee and tea roasting plant in Palestine.

CORWIN WICKERSHAM, vice-president of Standard Brands, Inc., in charge of the foreign department and of Widlar products, recently left on a three months' business trip to the Hawaiian Islands, Philippines and Japan.

HENRY WIERMAN has been re-elected president of Waldo (Wis.) Canning Co.

EARL V. WOLF has been made manager of the Providence (R. I.) baking plant of Ward Baking Co., succeeding WILLIAM M. SPENCE, deceased. He has been with the company 18 years.

Modified S.5, likely to become law. Action taken by Senate more important. House Committee hearings begin when and if Senate accepts report of its Commerce Committee. President wants new food legislation.

New Food Bills
Enter Congress

WITH the opening of the new Congress on Jan. 3, Senator Royal S. Copeland introduced a rewritten version of his proposed new Food and Drug Law. In the last Congress this bill was known as "S.2800" and had been favorably reported to the Senate by the Committee on Commerce after several public hearings in which representatives of the Administration, of industry, and of advertising were given opportunities to make presentations for and against its provisions. But Congress adjourned in June without taking any action on the bill.

The new bill, S.5, is a proposed "Federal Food, Drugs, and Cosmetic Act" and represents the work and views of Senator Copeland subsequent to committee hearings on S.2800, and to contacts with the Administration, industry, and advertising representatives. In provisions, it is a quasi-administration bill but it does not go as far as the proponents of the original Tugwell Bill would like.

As far as food is concerned, S.5's provisions depart from those of the June 6, 1934, revision of S.2800 in that it does not exclude the Canal Zone from its proposed jurisdiction; clarifies the definition of a label; tolerates the use of alcoholic flavoring extracts in ice cream and confectionery and non-nutritive masticatory substances in chewing gum; recognizes that optional ingredients may be used in foods if identified by official definitions and standards of identity and declared on the label under usual and common names; exempts ingredients of private formulas from declaration on label if filed with the Secretary of Agriculture; empowers Secretary to operate factories temporarily on a permit basis to protect the public health against a micro-organism epidemic contamination of food; makes the food distributing industry also eligible for representation on the Food Standards Committee; provides for the filling of a vacancy on the Committee by appointment for remainder of term and for an arbitrary promulgation of a temporary regulation by the Secretary of Agriculture as a substitute for a regulation declared invalid by court action; places responsibility for false advertising of foreign origin upon disseminator unless the statements are guaranteed or vouched for by a domestic manufacturer, packer, distributor or seller of the article advertised; limits multiple seizures to a total of three for misbranding of food; and protects the prerogative of the Secretary of Agriculture to collect, report, and illustrate the results of the investigations of his Department even though brand names are not to be publicly announced except in cases involving imminent danger to health or gross deception of the consumer.

OTHER provisions of S.5 are essentially the same as S.2800 as far as foods are concerned. On the whole this bill meets the wishes of most of the informed individuals interested in food. The few objectionable features do not warrant opposition to the bill such as might prevent its passage by Congress; even these features may be smoothed out in the hearings to be held.

The principal causes of disappointment to the Department are: 1. inadequate provision for complete disclosure of the composition or formulas of foods and drugs; 2. authorization for a single standard for a food instead of a quality standard for each recognized commercial grade; and 3. no definite authority for the granting of plant supervision and inspection except when requested by industry.

More vigorous measures are going to be proposed by the Department in an official communication to the Senate Committee on Commerce. These recommendations are now in preparation and it is expected that they will go to the committee early in February. The committee will very probably fix a date for the beginning of the hearing soon after these recommendations are received. Protracted sessions, such as were held last Congress, are not anticipated, but several days will probably be taken up. All representations to be made on the provisions of the bill should be made at this time.

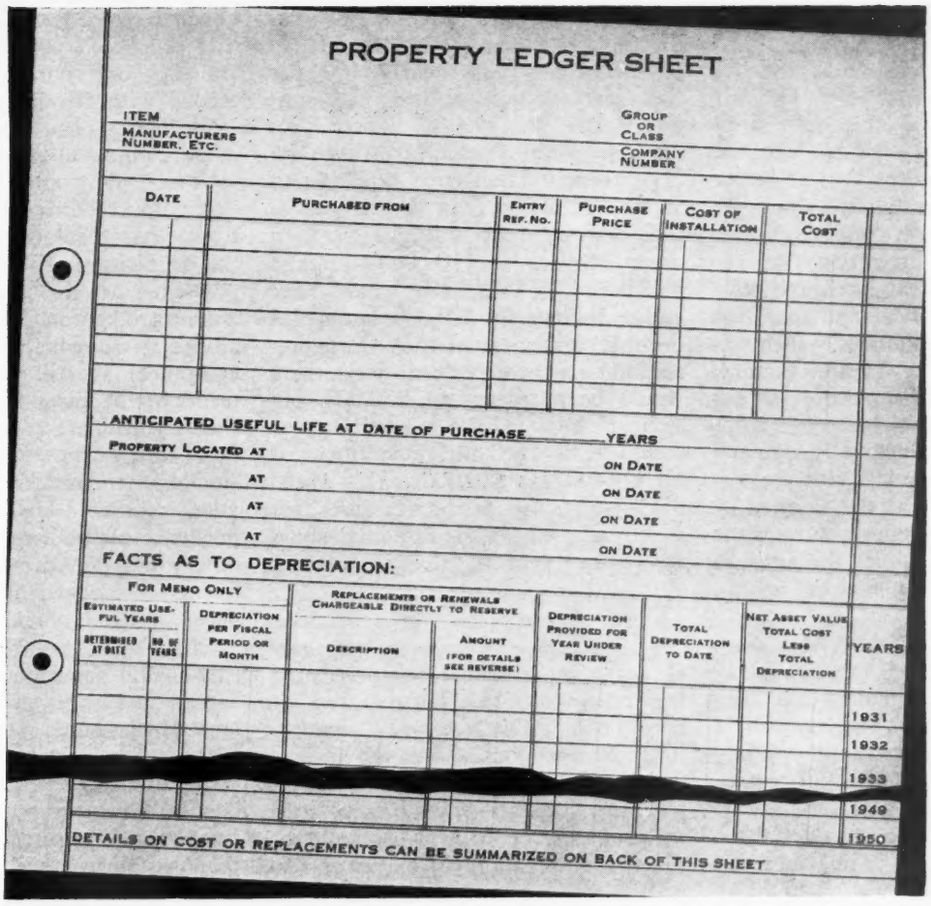
If the Senate Committee decides at the hearing to recommend enactment of the bill, the bill more than likely will come up for decision in April. Of course the progress secured will depend largely on the encouragement given Senator Copeland by the Administration leaders. It appears almost certain that the bill will be approved by the Senate if it comes up for debate and vote. Present indications are that immediately after the Senate action the House Committee will begin hearings which will be relatively brief.

Some features of the bill are bitterly opposed by various organized units in the food and drug industries, and amendments to cover these points are to be expected, particularly in the course of the Senate Committee hearings.

A.G.M.A.'s bill, S.580, drafted by Charles Wesley Dunn, has been introduced by Senator McCarran. Many believe that the best features of S.580 will be ultimately combined with S.5.

Proprietary Association's bill, H. R. 3972, drafted by James F. Hoge, was introduced by Congressman Mead who outspokenly criticizes S.5 and even objects to S.580. It is not likely to receive serious consideration.

Copies of S.5 or S.580 are obtainable from any U.S. Senator.



PROPERTY LEDGER SHEET

ITEM

MANUFACTURERS NUMBER, ETC.

GROUP OR CLASS

COMPANY NUMBER

DATE	PURCHASED FROM	ENTRY REF. NO.	PURCHASE PRICE	COST OF INSTALLATION	TOTAL COST

ANTICIPATED USEFUL LIFE AT DATE OF PURCHASE _____ YEARS

PROPERTY LOCATED AT _____ ON DATE _____

AT _____ ON DATE _____

AT _____ ON DATE _____

AT _____ ON DATE _____

FACTS AS TO DEPRECIATION:

FOR MEMO ONLY: ESTIMATED USEFUL YEARS — DETERMINED AT DATE	FOR MEMO ONLY: ESTIMATED USEFUL YEARS — NO. OF YEARS	DEPRECIATION PER FISCAL PERIOD OR MONTH	REPLACEMENTS OR RENEWALS CHARGEABLE DIRECTLY TO RESERVE: DESCRIPTION	REPLACEMENTS OR RENEWALS CHARGEABLE DIRECTLY TO RESERVE: AMOUNT (FOR DETAILS SEE REVERSE)	DEPRECIATION PROVIDED FOR YEAR UNDER REVIEW	TOTAL DEPRECIATION TO DATE	NET ASSET VALUE TOTAL COST LESS TOTAL DEPRECIATION	YEARS
								1931
								1932
								1933
								1949
								1950

DETAILS ON COST OR REPLACEMENTS CAN BE SUMMARIZED ON BACK OF THIS SHEET

New form prepared by author facilitates the keeping of proper property records and the calculation of depreciation.

Depreciation
Takes on a New Meaning

Federal treasury rules out "optional" deductions and makes proper property records essential, as the cost accountant sees it

By JOHN THIES

Manager,
Accounting Service Department,
Quality Bakers of America,
New York, N. Y.

EVER SINCE federal income taxes have been levied against business, the attitude toward depreciation has been biased by its effect on net taxable income. The amount of depreciation charged against a business generally has been governed by the directors' desire to show a conservative balance sheet rather than by any cost accountant's calculations. In good years, deductions for depreciation have been ample and often excessive—in poor years, small. The government knew of these so-called discretionary practices, and on Feb. 28, 1934, Treasury Decision No. 4422 came into existence, requiring the taxpayer to support with complete information any depreciation taken. That this decision may be complied with, cost accountants must put their "houses of financial facts" in order.

A splendid illustration of how the obsolescence, wear and tear of fixed assets must now be studied and reviewed is embodied in the method of arriving at a proper valuation of the horses used by food distributors. It hardly could be considered scientific to figure that a horse has lost one-tenth of its useful value at the end of the first year and at the end of ten years, say that it no longer is productively useful. Recognizing that this is only an arithmetical procedure and not a factual method, a number of food distributors use an annual inventory method to arrive at the proper value of their horses.

So with automotive equipment. When a truck is purchased, the accountant, considering that it is going to be put into a certain territory, might estimate its useful life as four years. However, with careful operation in an "easy" territory and with excellent maintenance, this car

may last seven years. But should there be lacking good driving, good maintenance or good roads, the life of the truck may not even be four years. If such is the case, why should the owners wait to take the loss on this equipment? It is better regularly to check the usefulness of the particular asset under review, changing the depreciation accordingly to a figure that has some relation to the actual wear and tear. In the case of equipment, such as freezers in an ice cream factory, evaporators in a milk plant or slicers and wrappers in a bakery—equipment which has been greatly changed and improved in the last few years—it is well to recognize the element of obsolescence and properly burden the cost of the product with the expense of operating the "inefficient" equipment.

Many companies have for years maintained what they term property records. But one element has been lacking in many of these records. If the accountant or engineer initially determined that the piece of equipment would last ten years, no change in the rate was ever considered on that particular item. And since this item was generally one of a group of possibly thousands of items, each one being taken at ten per cent, the net effect was to break down gross depreciation over a thousand items on a more or less arithmetical basis. The second unfortunate feature of these property records was the fact that the accounting department might never be advised when equipment was junked or shifted unless it involved an exchange for new equipment.

A further element that has not always been considered from a technical angle is that of replacement and renewal. New parts of a major type would be installed on machinery, new engines put into automobiles, motors replaced on mill machines; yet, all these would be looked upon as repairs.

The replacement of roofs and floors offers a good illustration of how building depreciation may be handled. Engineers tell us that the modern type of mill building properly fire-proofed and sprinkled is good for better than 50 years. Consequently 2 per cent per annum has been considered a just rate of depreciation. However, when a floor or roof must be replaced, the owner is called upon to make a large outlay which distorts the costs for that particular fiscal year. Recognizing that the replacement may put the particular properties into nearly 100 per cent usable condition, it is now suggested that the rate of depreciation might be set at 3 per cent rather than 2 per cent. Then such replacement as that of a floor can be charged to the reserve for depreciation. In other words, a $100,000 building which is ten years old would have had a reserve of $20,000 under the original arrangement. With depreciation on a three-per cent basis, there would be a reserve of $30,000, but against this in the eleventh year would be charged the replacement of the floor at, say $10,000. This would not distort the operating costs for that year, and yet the building would again have a book value of $80,000.

THE clerical work that some food companies are now called upon to do to get a proper perspective of their depreciation charges and to carry out T.D. No. 4422 may in itself be formidable; yet the task is not insurmountable. The accompanying illustration outlines a style of property record which should be given consideration. As against records already in existence, this form provides for a determination of the useful life in years at regular intervals. It also provides for charging replacements and renewals directly against the reserve. It permits equipment to be shifted from one location to another with proper recording of such transfers. This form can be lined up for machine bookkeeping, making it easy to computate such items as "depreciation taken for the year under review" and "the balance of the reserve to date." The size of form suggested is 8½x11 in.

The years have been printed on the form, beginning with 1931, so that if a particular piece of equipment does not come into existence or is not acquired until 1935, for example, the depreciation for 1936 will be written on a definite line, the same as all assets in existence and listed since 1931. This makes it very easy for the property record clerk to quickly arrive at sectional or group totals of the asset values themselves and the reserves provided for the year under review and for the years to date.

If no records of whatever kind are available, it is suggested that the property accounts in the general ledger itself be broken down. Start by referring to the purchase records, voucher records or check registers and prepare a property ledger sheet for each unit purchased. Begin the record with the latest purchase and work back. In food plants, where much equipment is replaced at short intervals, it would be well not to carry this record further than 1924. From that point only a brief list of the acquisitions should be made and presented to the operating man or chief production official who will advise as to whether this particular equipment is still in existence and use. At the same time, the property sheets that are already made up from the years 1934 back to 1925 should be turned over to this operating official. He will verify the existence of the assets and the breakdown by departments and subsequently help determine the estimated useful life.

Small units should be grouped into classes and departments. Such items as can jackets in an ice cream plant, boxes in a bakery and milk cans for a dairy are items that have a very short life. Therefore, it would be best to inventory those actually on hand and out with the customers and then set them up as the book value of the property on hand, allowing of course for depreciation.

MANY food factories have a method of coding their purchases of small equipment. The company's name is stenciled, painted or burned into the equipment in a different color or pattern for each year so that the 1932 purchases, for example, are easily distinguished from the 1934 acquisitions.

Equipment on a general ten per cent per annum basis of depreciation and which was acquired since 1925 but was not in existence by 1934 calls for an investigation as to when it was eliminated. The depreciation accumulated to the date when it was discarded should be applied and the loss or gain determined. No charge should be made to the surplus for the losses realized on such discarded equipment until the complete work of reconciling the property account has been concluded, for it may be found that in using the general round "write-off" figures in connection with the reserves that ample has been provided for the losses that are now to be taken on equipment lost or destroyed. When this is found to be so, the necessary entries should be made in the books, canceling the

(Turn to page 104)

Overcoming Difficulties in the Use of

HONEY

Lactose and whole sweet milk used by candy maker to control crystal formation corrects objectionable sweetness, sweating, and hardening of honey fondants

By E. F. PHILLIPS
Department of Agriculture, Cornell University, Ithaca, N. Y.

WITHIN the past few months a new candy combination has been perfected which not only results in an attractive confection but also combines honey, whole milk, and milk sugar without the use of any filler, adulterant or other questionable material.

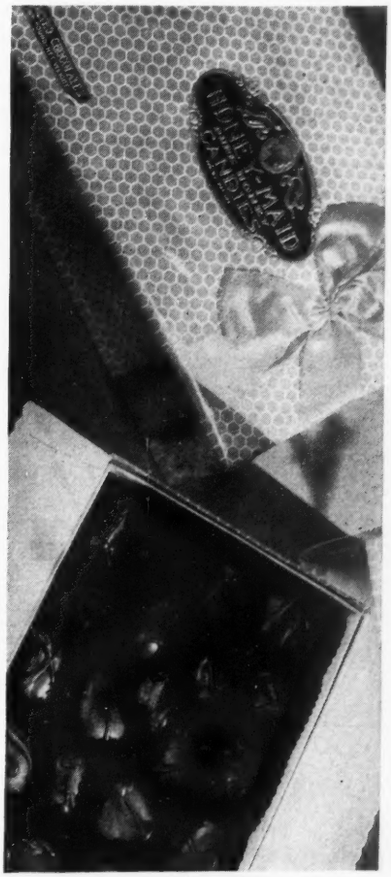
This new confection has not been an overnight development, as some years ago Miss Nellie J. Stratton, now of Youngstown, Ohio,[1] conceived the idea of a candy in which honey is the sole sweetening agent. Miss Stratton was aware of the many attempts to compound a honey candy, and was equally aware that those who preceded her in these efforts had been able to make a marketable product only by adding as much as 50 per cent of cane sugar, corn sugar, corn syrup or other common sweetening agent, so that the honey ingredient became a source of flavor rather than a principal ingredient.

The difficulty in making a genuine honey candy lies in that the sugars in honey are peculiarly proportioned. Those which form the larger part of honey are levulose and dextrose; the same two sugars that occur in equal proportions in invert sugar syrup. However, there is a difference between the use of invert sugar syrup and honey in candy making because the levulose content of honey always exceeds the dextrose content.

Levulose has the property of absorbing moisture; consequently candies made of pure honey usually become so sticky in a few hours as to be unsaleable. Also levulose is a sweeter sugar than others and, in addition to its sweetness, has a characteristic and most attractive flavor. Not being merely "dead sweet," the additional proportion of levulose in honey is highly advantageous if only the stickiness is controlled.

After repeated efforts to make a honey candy along the usual lines, all without prospect of commercial success, Miss Stratton finally found that a small proportion of milk sugar (lactose) added to the honey caused the stickiness to disappear from the resulting candy. This observation was an important step in her progress, and its application to practice made possible the next step in the production of her honey candy.

Addition of milk sugar to candy seemed a real step forward as it is less sweet than the more common sugars, hence not adding sweetness to the confection. Also up to the present milk sugar has not been a widely used ingredient of commercial American candies[2] although it is reported that it has been used to some extent in European confections.



Aside from its dietary advantages, honey and milk sugar behave in peculiar ways when combined in fondant. Fondants consist of a solid phase composed of small crystals of one or more of the sugars which enter into its composition and of a liquid phase of the larger portion of the ingredients which do not crystallize but surround the small crystals. In ordinary fondants the solid phase is either cane sugar or dextrose. As honey normally contains some dextrose, it might be anticipated that the solid phase of honey-lactose fondants would contain at least some dextrose crystals, but such is not the case. The solid phase consists solely of microscopically minute milk-sugar crystals. All the dextrose of the honey remains in the liquid phase along with the levulose and all other honey ingredients such as flavoring materials, together with some of the milk sugar.

The striking feature brought out by a microscopic examination of the honey-lactose candy is the minuteness of the crystals of the solid phase. During the development of this new candy, microscopic examinations were made of many ordinary fondants from candies of high and low quality, of high and low price, and of all manner of combinations of ingredients. In none of them were found crystals which compare in minuteness with those in the honey-lactose fondants.

Obviously, the formation of such small crystals gives a smoothness to the fondants not otherwise obtained even though some candy manufacturers seek to attain this desired smoothness in their fondants, by the

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[1]U. S. Patent No. 1,854,430 dated April 19, 1932.

[2]Food Industries Vol. 5, p. 304 (August 1933)

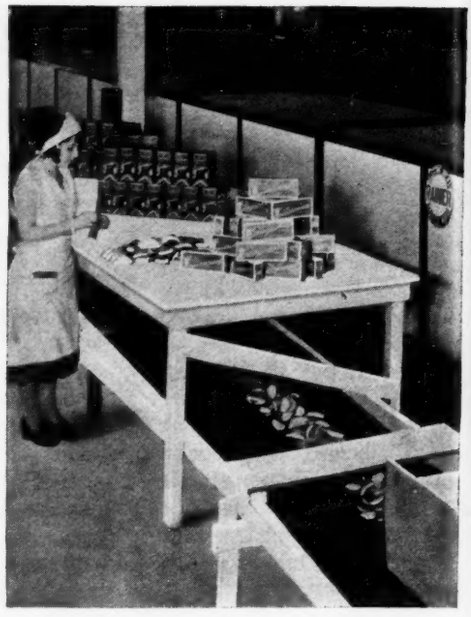
Photocell

Cuts Cripples 7 Per Cent for Cracker Baker

And it improves quality by accurately controlling toasting temperatures

By SOPHIE C. CUBBISON
Cubbison Cracker Co., Inc., Los Angeles, Calif.

and H. G. FITZGERALD
Illuminating Engineering Co., Los Angeles, Calif.



BY TAKING advantage of the sensitivity of the photoelectric cell to color changes, Cubbison Cracker Co., Inc., Los Angeles, has put under precision control a process which formerly produced much waste and a non-uniform product. Before the electric eye was put into service, the oven for toasting zwieback, melba toast and "Melbetts" was manually controlled, and it was necessary to retoast daily about 8,000 slices which came through too light in color and to destroy from 2,000 to 3,000 pieces that were burned. All of this has been eliminated by photocell regulation.

Melbetts, to take one product, are made by toasting bread slices in a 55-ft. electrically heated leer oven with a capacity of 150,000 slices per eight-hour day. The temperature in this oven ranges from 225 deg. F. in the first 45 ft. of its length to 350 deg. in the last 10 ft. where browning takes place. The bread passes through the oven on a mesh-wire conveyor at a speed of about 2½ ft. a minute.

The oven is composed of five sections joined together to form a continuous tunnel about 12 in. high and 30 in. wide. Each section is equipped with enclosed heater trays, four above and four below the conveyor. Two thermostats control the two top and two bottom heater elements, while manually operated switches control the other four elements. The temperature and the speed of the conveyor are so regulated that the toast reaches the last 10 ft. thoroughly dried, but not browned. While traveling the last 10 ft., the pieces are toasted to a certain brownness, and it is here that the electric eye comes into play.

Two photocells are used, these being spaced about 2½ ft. and 7½ ft., respectively, from the end of the last section (see Fig. 1). Toast passing the first eye is brought to that color which it ought to have at the time it enters the space between the two photocells. Should the pieces be too dark, this first cell turns off a pair of heater elements (one top and one bottom) just ahead of it. This assures that the next toast passing it will be of the proper tone and puts it up to the second eye to perfect the coloring of that which goes by the first eye off color. When the toast reaches the second photocell at the peak color, that cell turns off the heat from there on. But if it is too light in color, the eye turns on, or leaves on, the last two heaters.

Before the photoelectric color control was installed at Cubbison Cracker Co., it was the work of the operator to watch the toast as it emerged from the oven and turn off or on one or more of the heater elements in the toasting section when the color was not right. Since the operator could not be sure whether the toast was off color until it had come out of the oven, his judgment and skill were constantly taxed to maintain the proper regulation. And his task was especially difficult inasmuch as the same oven was used for zwieback, melba toast and white and whole-wheat Melbetts, all of which require somewhat different conditions.

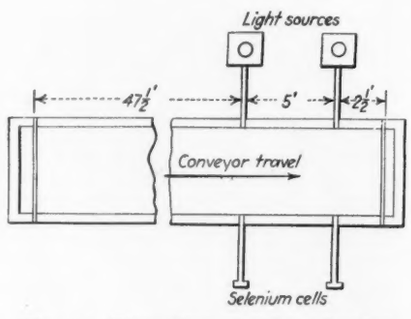
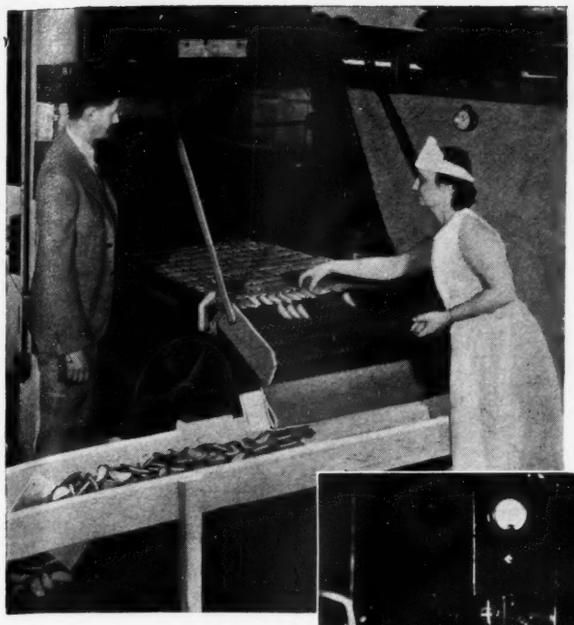


Fig. 1: Plan view of oven, showing spacing of photocells.

A schematic diagram of the two photoelectric controls is shown in Fig. 2. Group *E* represents the photocell, the light for illuminating the toast and an adjusting dial. This group connects to *A*, which is a sensitive relay that actuates, in turn, the "on" and "off" intermediate relays *B* and *C*. These close or open the impulse relay *D*, which is connected across manual switches to the oven heating elements so as to permit manual operation when the photoelectric control is disconnected. *F* is a microammeter which can be connected to either circuit by switch *G*. The group on the right is a duplicate circuit. The red and white lights indicate whether the heating elements are on or off.

To operate the control, the adjusting dial is set at a number corresponding to the color of toast desired. The microammeter will register 100



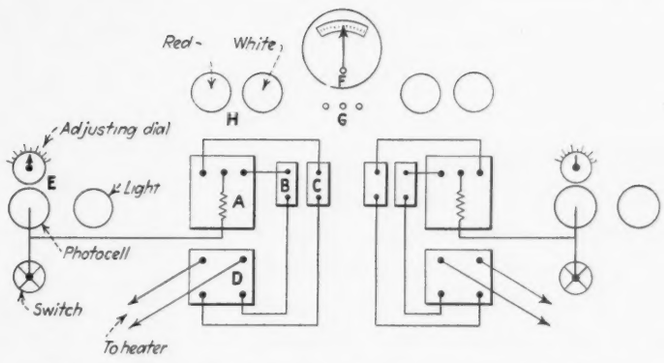
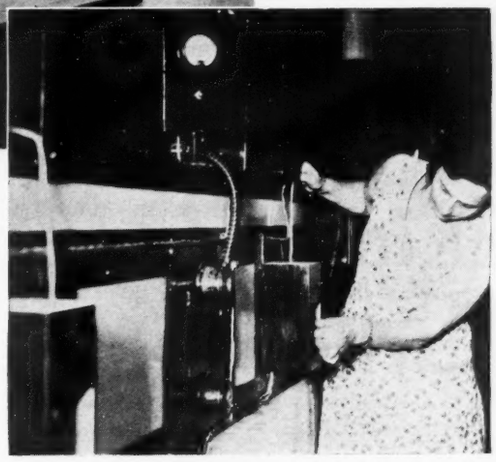


Fig. 2: Schematic diagram of photoelectric control systems.



Bread slices leaving oven after toasting to the correct color under heat regulated by photocells.

Right: Adjusting the photoelectric control to the degree of brownness desired.

when the color corresponds to the setting, and relay *A* will "float" in the center between "on" and "off." If the toast gets darker, relay *A* will fall to the left and turn off *D* and the heaters. If the toast is too light, the opposite action takes place. The relay is set to make contact at one point above or below 100. The method used to determine the position at which the adjusting dial should be set is to find, by experiment, what dial setting will give a meter reading of 100 when the toast is of the desired color. This is then recorded for future reference.

To understand the operation of this system, it must be borne in mind that the photocell used here is of the selenium type which passes more current when exposed to light and less when it is darkened. With toast of the proper color, the amount of light reflected by the pieces to the photocell is such that enough current passes through the cell to hold the relay contact in the center between "on" and "off." As the magnitude of this current varies, the relay contact moves in the corresponding direction.

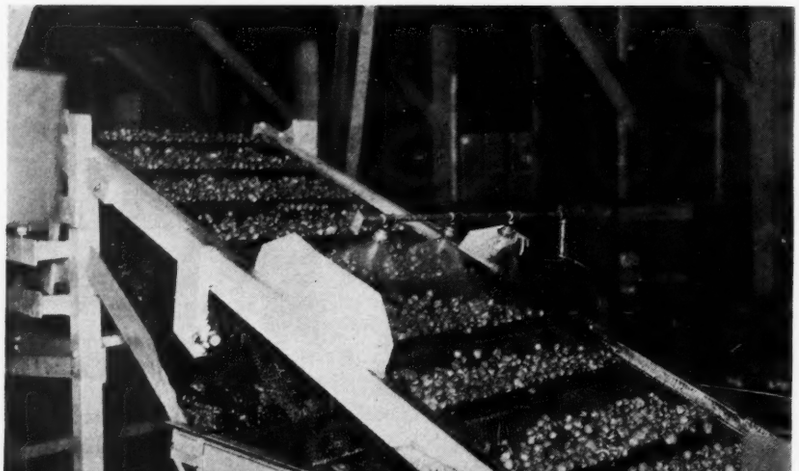
Accuracy, economy, speed and reliability are all to be had in this type of control. As to accuracy, the difference in color which actuates the relay can hardly be detected by the human eye. Furthermore, the off color is detected at a time when correction can be effected. The cost of installing the control equipment is not high, amounting to only $250 for a single control circuit, or $500 for this double unit used by Cubbison Cracker Co. This investment is returned many times in the form of savings in power and labor during a year of operation, to say nothing of the waste eliminated and the uniform product obtained. Little servicing is needed, as the photocells and other elements of the control system will operate for years without renewals. An occasional cleaning and changing of light bulbs to keep constant the amount of light thrown upon the toast is all that is required. No periodical calibration is necessary and no special skill is needed to operate the system.

The power consumption of the two light sources is more than offset by the promptness of the system in turning off the heater current. While the primary circuit, or photocells, in accurate quantitative systems of this type receive current from dry batteries, the drain on the batteries is so slight that they will last about as long as they would on the dealer's shelf. Incidentally, these batteries are required to assure a constant voltage on the photocell circuit when the voltage fluctuates in the power circuit.

To protect the light source and photocell against the high temperature in the oven, the ports through which the light shines upon the toast and through which the reflected light passes to the photocell are heat insulated. These ports are concentric horn fiber tubes separated by dead air spaces. The center, or light-transmitting tube, has in the end next to the oven a window comprising three pieces of glass with dead air spaces between. Although the temperature in the oven reaches 350 deg., that at the photocell is only 80 deg. Both the light source and the photocell are readily removed.

For color control in the food industries, the photoelectric cell has a number of possibilities, and the particular system used to regulate the color of the toast produced by the electric ovens of Cubbison Cracker Co. may be adapted to many types of ovens through intelligent engineering. In addition to its use in regulating color, the electric eye is employed to inspect products for imperfections, regulate the register of printed wrappers, start and stop motors, control speed, open doors, turn lights on and off and operate fire alarms. The electric eye is far more reliable than the human eye, is more sensitive, will not fatigue and will register much more quickly than the human eye can respond.

NEW METHODS . . . such as packing sliced berries and close control of operations . . . insure fruit prepared to meet the individual needs of ice cream manufacturers; preservers; bakers; syrup, flavor and extract manufacturers; and the beverage industry.



Conveying strawberries from the washer to the inspection belt. Note the spray over the conveyor, providing a final wash or rinse for the berries.

Cold-Packing Northwest Strawberries

By R. T. SHANNON
R. D. Bodle Co., Seattle, Wash.

COLD-PACKING berries is a comparatively new development. Its pioneers are in many instances still active in the industry. The successful cold-packer of today, even though he has been in business for only a decade, has survived only because his percentage of hits was greater than his errors. He had no background of experience like that of the canner, preserver or processor of other foods; the cold-packer had to follow the age-old system of trial and error. Obviously, by this system too many errors eliminated many of the early-day cold-packers. Those who survived did so because they kept abreast of all new developments, inventing most of them themselves, found markets for their output, and became skilled in the selection of varieties.

Today, cold-pack strawberries are purchased by preservers, ice cream manufacturers, soda fountain suppliers, bakers, restaurants, flavor and extract manufacturers, and juice manufacturers. Each one of these buyers' requirements will differ in respect to sugar content and package size, as well as size and degree of ripeness, pectin content, variety of berry, and other factors.

Our company was founded in 1917 by Ralph D. Bodle, who was attracted to the possibility of saving growers' strawberry crops which were being put on the market during the peak of the season at ruinous prices and in some instances sold for the price of the crate alone, in which case the grower lost the picking, packing, transportation and selling cost, in addition to his strawberries.

The Marshall variety of strawberry produced a very fine quality preserve, but to pack preserves in the Pacific Northwest was not feasible because of the high cost of glass and the high freight rates to large consuming centers. Also the investment for containers, and for packing plants to be operated only 30 or 40 days per year, was prohibitive.

In searching for an outlet that would stabilize the fresh strawberry market, Mr. Bodle visioned the possibility of cold-pack. The Eastern preserver could pack his preserves at any time of the year as needed and would not have to work at a terrific pace during the fresh strawberry season. This would permit larger yearly capacity of plants by spreading the season, and also save heavy investment in containers. The position of the soda fountain supplier was similar.

The ice cream manufacturer, by using cold-pack, would have a pure, true flavor that was in popular demand. At any time of the year, the baker could, by the use of cold-pack fruit, produce pies and pastries equal to those produced during the fruit season.

That vision, which many classed as a "pipe dream," became a reality.

Our packing methods of today are in great contrast to those of a few years back. At that time the strawberries, hulls off, were hauled in from the fields at the end of the day, about 100 lb. of berries put into each barrel, one-half a sack of sugar added, and this was repeated until there were 300 lb. of berries and 150 lb. of sugar in each 50-gal. barrel. In order to settle the fruit in the barrel it was customary to rock the barrel

over a piece of 2x4 lumber which was placed on the floor.

Often a 50-lb. cake of ice was put in the barrel to prevent fermentation and an equal quantity of berries and sugar left out. The barrels were then transported to storage, where they were stored on end. This caused the sugar syrup to respond to the law of gravitation and settle in the bottom of the barrel, while the berries floated on the top.

Today cold-packing plants are located in or adjacent to the strawberry fields and growers deliver their berries in flat crates of twelve wood veneer hallocks, containing approximately 1 lb. each. The hulls have been previously removed in the fields.

Each grower's lot on delivery is inspected by a State or federal government inspector who has sole authority to reject any lot that is not of first-class quality.

Berries are then trucked to a tank of agitated, flowing water, where they are immersed just long enough to remove sand and dirt. The berries are carried up from the washing tank on a wire-screen belt and sprayed with pure, clean water to remove the last vestige of dirt.

From the wire belt, berries are delivered to the graders, which consist of rapidly moving platforms with holes of $\frac{5}{8}$-in. diameter. The forward and backward motion of the grader carries the larger berries across it to the inspection belt, and the berries under $\frac{5}{8}$ in. fall below and are thrown away.

Women stand on each side of the inspection belt, which may be 30 to 60 ft. long, and remove all leaves, misshapen, overripe, green or otherwise defective fruit.

The berries are then delivered to containers, where sugar is sprayed on from overhead sugar bins. The sugar flow is manually regulated to suit the quantity of fruit being delivered to the containers. This insures a thorough distribution of sugar and fruit and permits quick dissolving of the sugar.

After weighing, the containers are closed. Barrels are rolled out on the floor and given a roll of a half turn and rocked at short intervals to immerse thoroughly all berries in the sugar and fruit-juice syrup. Tins are lidded and placed in cartons.

After remaining long enough to dissolve all sugar, the berries are transported to sharp-freezing rooms with a temperature of —5 to 0 deg. F., where they are held for 48 to 72 hours, then moved to holding rooms with a temperature of 12 to 15 deg. F.

While the barrels are in the sharp freezer they are rolled a half turn and rocked every few hours to make certain all sugar is dissolved and the berries are what may be termed "sugar-cured." In contrast to early-day packing, barrels are stored for 30 days or more, not on end but on the bilge, and given an occasional turn.

The latest development in cold-packing is the slicing of strawberries, the present use of which is confined almost solely to the ice cream manufacturer, who finds several advantages in this pack.

We quote opinions from an unbiased source, a paper entitled "The Use of Frozen Sliced Strawberries in Ice Cream," prepared by Drs. M. J. Mack and C. R. Fellers, of the Massachusetts State College, which was read before the production and laboratory council of the International Association of Ice Cream Manufacturers, by Prof. Mack.

"We feel that the question of slicing strawberries is a problem of first consideration only to the fruit packer; to the ice cream manufacturer it is of secondary consideration. The fruit packer evidently can improve the quality of his frozen strawberries by slicing them previous to packing. The practice improves the flavor and appearance of the product somewhat, helps to get all the sugar in solution, produces a product which appears to contain less syrup, gives the fruit a slightly firmer texture, and decreases to some extent deterioration of the fruit at the surface of the container. To the fruit packer, slicing strawberries appears to be another means of improving his product.

"The ice cream manufacturer should look with favor upon the innovation of sliced strawberries. However, he should not blindly insist that sliced berries be purchased. He should bear in mind that such factors as variety of fruit, size and quality of the berries, degree of ripeness, and fruit-to-sugar ratio are factors which have a greater effect on the flavor of the ice cream than does slicing the fruit before packing. The purchaser of fruit has no assurance that the packer is using the same grade of berries for slicing as for his whole-fruit packs. Therefore, the ice cream maker must buy the strawberries that impart the best flavor to his ice cream. He should not forget, however, that, other factors being the same, slicing berries before packing does improve somewhat the quality of the frozen fruit."

We are certain that further uses for sliced berries will be found, as considerable experimenting is now going on.

The last of the sugar going into the barrels of berries, before the heads are put in place.

Filling barrels with soy sauce.

Soy Sauce *Goes* American

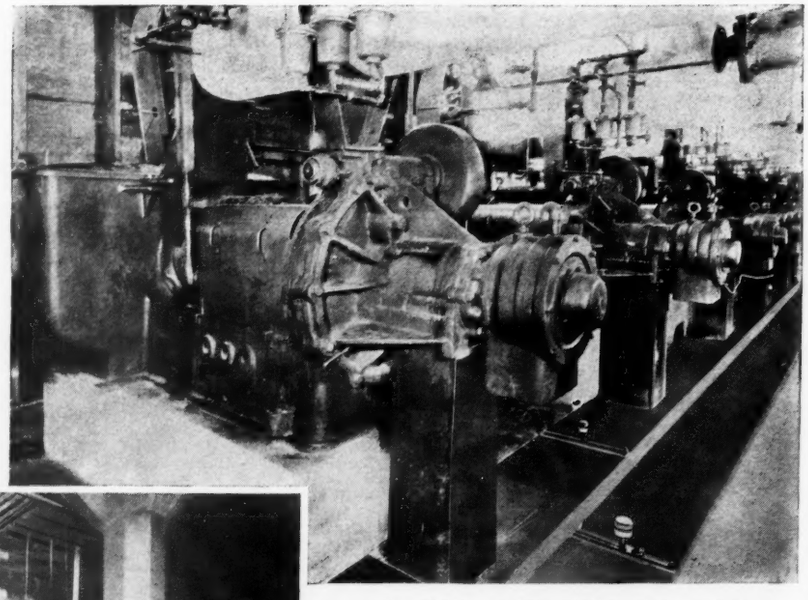
Formerly made by crude Oriental methods, now a scientifically controlled domestic product

By A. R. STALEY

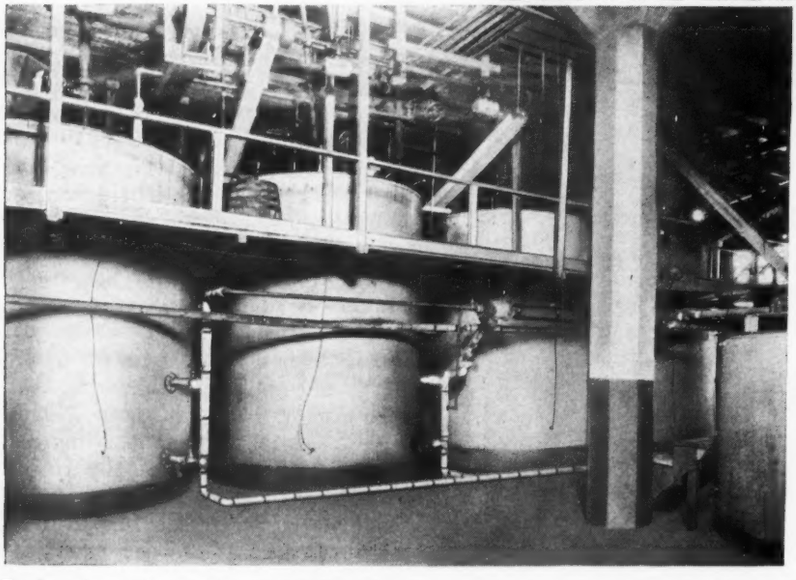
Manager, Special Products Division, Staley Sales Corp. Decatur, Ill.

OUT of the vats of China and Japan for many generations came the soy sauce used in this country as a table condiment and as a flavoring agent for manufactured foods. But times have changed. Within the last few years this ancient industry of the Orient has been modernized by American manufacturers. The domestic companies have put the soy bean through the research laboratories and have developed not only a modernized version of the old soy sauce but entirely new soy bean products.

For twelve years, the research chemists of A. E. Staley Manufacturing Co., Decatur, Ill., experimented, developed and perfected, in the end coming out with a better soy sauce than the best imported product held up as their goal. They also developed a soya flour, and already a refined soy bean oil was being marketed.



Expellers in the Staley plant which remove part of the oil from the soy beans preparatory to fermentation.



Tanks where the proteins of the soy beans are converted to compounds giving the sauce its characteristic flavor.

Contrasted with the crude, uncontrolled and none too sanitary methods of the Oriental soy sauce experts, is the highly scientific American method of manufacture. In the Staley plant,

large mechanical dryers condition the beans before they are processed, and batteries of high-pressure expellers remove a portion of the oil to prepare the beans for fermentation and conversion. Then sanitary fermenting and converting tanks change the proteins of the beans to those compounds which give the sauce its characteristic saline, meaty flavor.

The conversion must be watched over constantly by expert chemists and bacteriologists because it is difficut to control, what with the breaking down of the proteins to amino acids and the partial fermentation of carbohydrates to lactic and acetic acids. When fermentation is complete, the product passes through a clarifying process and goes to the barreling and bottling department.

In the Orient, the sauce is made by boiling the beans, adding an equal part of wheat or barley and letting the mass ferment. To the fermented mass is added a layer of salt and three times as much water as there are beans, then the mass is pressed and strained. At best, it is impossible by this method to obtain anything like a uniform product—a factor of importance to food manufacturers using the sauce as as an ingredient.

The soy sauce produced by the modern domestic method finds favor among food manufacturers for several reasons. In addition to being more uniform and of a superior quality, it is more sanitary. Moreover, the domestic product comes from a convenient and constant source of supply, which enables the buyer to avoid large stocks and loss by leakage during storage. Another point in favor of the domestic product is that its purchase involves no dealing in fluctuating foreign exchanges.

This chapter in the history of food modernization is by no means complete. The high food value of the soy bean and the increasing production of the legume in this country point to bigger things. The bean is very high in protein, and the digestability of the protein amounts to about 95 per cent. The bean is almost devoid of all starch, showing only a trace, and it possesses a carbohydrate content of well over 25 per cent.

Sauce from the soy bean finds many important applications. In addition to being used with Chinese foods, it is employed as a base for meat sauces, as a flavor in various foods and as a table relish.

When You Renew Your Industrial
Power Contracts *

WHEN it is time to make a new contract for food-plant power, the mangement should remember that a dollar saved in purchasing energy has just as much gold backing as one made by efficient plant operation. And inasmuch as it is easy to overlook important points when involved in the intricacies of industrial power contracts, every phase of the negotiations should be under the eyes of one who has struck up more than a passing acquaintance with the power-supply situation.

If the plant be too small to boast a competent power engineer, it should utilize an outside specialist to study its power bills in relation to demand, consumption, factory output, variations in cost of purchased power and other service furnished by utilities, and accuracy of billing. And the findings of this man, as well as the man himself, should be at hand when a new contract is made.

While one would hesitate to list the elements involved and the procedure to be followed in contract renewal, the experience of plants successful in obtaining satisfactory contracts does afford a basis for negotiation. In the accompanying table will be found fifteen points that should be thrashed out when discussing a new power contract with the sales-engineer from a utility. Most of these are taken from the experience of a plant which started out to get a concession in electric rates and wound up with what it termed a satisfactory contract. The others are from another conference where the factory was prepared to sell surplus power to the utility on occasions.

In Power Contract Discussions Settle These Points:

1. Agreement that legal departments shall pass on completed draft of new contract, draw up final form and submit to executives for approval.
2. Definitions of terms, including: demand, peak hours, off-peak operation, primary power, secondery power, surplus power, industrial feed-back power for sale to utility, connected lighting, power and heating loads.
3. Specification of points of delivery, phase of energy supplied, voltage and frequency variations permissible.
4. Statement of demand provided for and provision for increased power supply in the event of business expansion. Terms under which additional capacity will be supplied for stated periods.
5. Consideration of guarantees of minimum demand to be paid for by customer, and allowances for reduced central station plant, line and substation capacity in case the customer's business diminishes.
6. Definition of boundaries of ownership of plant involved in electric service.
7. Amount of spare transformer capacity to be provided in substations.
8. Facilities for protection against lightning.
9. Agreement as to power-factor penalties, bonuses and neutral zone for use in billing. Discussion of responsibility for investment and operation of future power-factor corrective equipment, and its location.
10. Discussion of price to be paid per kilowatt of demand and per kilowatt-hour consumed. Due weight to be given to proposed increase in feeder facilities and substation capacity to meet new conditions in factory. Parties to jointly analyze cost of providing additional facilities. Basis of feed-back power sales to utility.
11. Metering facilities for light, heat and power services.
12. Provision for checking meter calibrations and periodic requirements in testing.
13. Billing arrangements and payments.
14. Discussion of coal and oil price clauses, and of relation of hydro-electric power purchases by utility to kilowatt-hour prices.
15. Provisions for arbitration, cancellation, periodic survey of contract, and its renewal of modification.

**Reprinted in abstract from Power, December, 1934*

Stock Acid Saves Time

A practical and accurate method of making up stock solutions for the man behind the test tubes

By HALDANE GEE
New Brunswick, N. J.

LABORATORY men in food plants will save themselves much time and considerable distasteful work by preparing at one time a sufficient quantity of "stock" acid and alkali to meet their needs for a year or so. Especially is this true where considerable volumes of standard acid and alkali solutions are used in routine analysis. And no sacrifice in accuracy is made in using the stock-solution method.

Stock acid is ideal for the laboratory which now standardizes, perhaps once a month, new batches of N/10 or acid for general purposes, and N/14 for Kjeldahl determinations. Solutions of any desired normality can be prepared quickly with better than 0.1 per cent accuracy. Moreover, they can be adjusted to exact normality without repeated trial standardizations, thereby making possible round-number factors which simplify calculations. And there is still another advantage. If new batches of acid are required monthly, the interval usually is long enough for the chemist to lose the feel of analysis, and it is seldom as easy to get satisfactory checks as the time-honored recipes make out. Besides, the average food chemist does not relish frequent barium standardizations of sulphuric acid.

SUCCESS of the stock-solution method for standard sulphuric acid hinges upon the fact that the stock is prepared with a specific gravity of 1.42, in which concentration it may be exposed to the air without rapid gain or loss of moisture. Under the ordinary range of humidity in the laboratory it can be weighed in an open vessel. A more concentrated sulphuric acid will act as dehydrating agent, while a more dilute one loses moisture, as is well known.

In practice, the concentration by weight of the 1.42 stock is determined carefully, once and for all, by gravimetric analysis. Standard solutions of any desired normality can then be prepared by weighing out the proper quantity of this stock. The quantity needed for two liters of tenth-normal solution, for example, can be adjusted in an open weighing bottle to within 0.01 gram with ease, which is closer than is necessary for any food routine.

As the procedure calls for enough stock acid to last, when properly diluted, for an entire year, let us suppose that a 5-gal. demijohn of 1.42 acid will cover those requirements. To prepare this, add C.P. concentrated acid to distilled water, mix and cool, and adjust by adding more acid or water until there are 5 gal. of mixture which reads 1.42 by hydrometer. Next, determine the exact concentration of the stock acid. For this purpose, clean, dry and tare a weighing bottle, and pour in approximately 25 c.c. of the stock acid. Stopper the bottle and weigh closely, with a second person checking the weights. Transfer the sample quantitatively to a 2-liter volumetric flask and make up to volume. Take pipette aliquots of this dilute solution for the usual barium sulphate precipitations, which are run according to the customary procedure. Make six to ten check determinations. Then the average result can be further verified by a separate determination as ammonium sulphate. To do this, clean, dry and tare a set of crystallizing dishes, and measure out a second series of aliquots with the same pipette which was used for the barium determinations. Add an excess of C.P. ammonia to the acid samples, and take slowly to dryness in an oven. Moisten the ammonium sulphate two or three times with fresh ammonia, and finally dry to constant weight. The barium sulphate and the ammonium sulphate give two separate results for the concentration by weight of the stock acid, or the number of grams of H_2SO_4 contained in each 100 grams of stock.

Succeeding steps are best illustrated by example. Suppose the stock turns out to be 52.1 per cent H_2SO_4 by weight. You wish to make two liters of N/5 solution. Calculate how much 52.1 per cent acid you need for 2,000 c.c. of N/5. It works out as 37.65 grams. Weigh exactly that much stock into a clean, dry, tared weighing bottle, adjusting the quantity of acid with a dropper until the balance teeters at the nearest centigram. Transfer quantitatively to the same volumetric flask that was used in the standardization, and make to volume. That's your solution, normality 0.2000. N/10, N/14 or any other normality desired can be prepared with equal ease. Glassware errors cancel provided the same volumetric flask is used for both standardization and dilution.

The idea can be applied in modified form for standard alkali solutions, with the convenience of round-number normalities and the avoidance of frequent adjustments. If you wish to use N/10 alkali, prepare 5 gal. of hydroxide of slightly more than normal concentration. Pipette 200 c.c. of the strong alkali into a 2,000-c.c. volumetric flask and make to volume. Titrate with 0.1000 normal acid. Now dilute the nearly normal alkali step by step until a 1:10 dilution, prepared as described, is exactly equivalent to N/10 acid. One now has almost 5 gal. of exactly normal alkali. Lots of two liters of N/10 can be prepared for use as needed by diluting 1:10 with the same pipette and volumetric flask. The plan furnishes nearly 50 gal. of N/10 solution, requiring only one adjustment, the original one, and occupying a minimum of storage space.

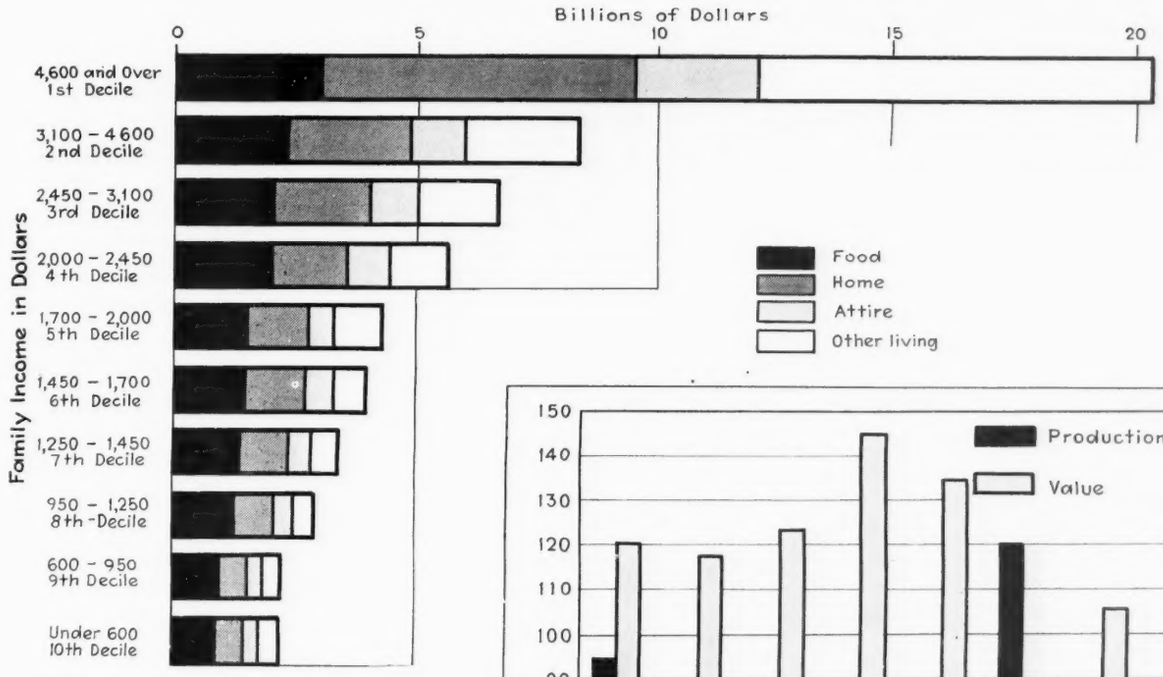
INSTEAD of preparing his own, the chemist may, of course, buy standard acid, which is expensive and may be uncertain; moreover, this may introduce errors due to differences between maker's and user's glassware. Another plan is to prepare a constant-boiling hydrochloric acid, which is troublesome and requires a barometer. And some makeshift methods of acid standardization are used, including the titration with acid of weighed quantities of sodium carbonate, and alternatively, the standardization of sodium hydroxide with phthalate, with which the acid is afterward compared. None of these methods is as satisfactory as the stock-solution method for standard acid.

A FACT PICTURE OF THE FOOD FIELD

Consumption and Production . . . . . Page 69
Activity Indexes . . . . . Page 70
Income of Food Manufacturers . . . . . Page 71
Food Manufactures (1933 Census) . . . . . Page 72
Merchandising of Foods . . . . . Page 74
Population, Land, and Food Supply . . . . . Page 76

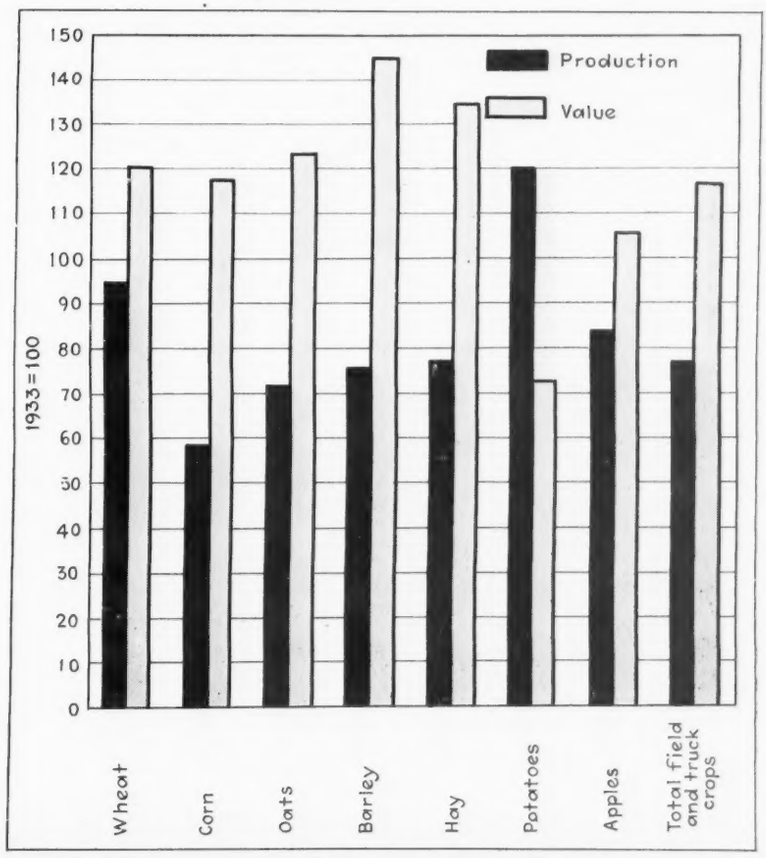
Classified Consumptive Expenditures of American Families

In the chart given below the expenditures, by families, for food, home, attire and other living costs are shown for the year 1929. This year has been selected as the most recent census year in which relief expenditures did not throw the picture out of balance, at least in so far as the lower income brackets are concerned. Each horizontal bar represents an income class of approximately 2,750,000 families, the total families in the United States being approximately 27,500,000 in 1929. (Data from The Brookings Institution.)



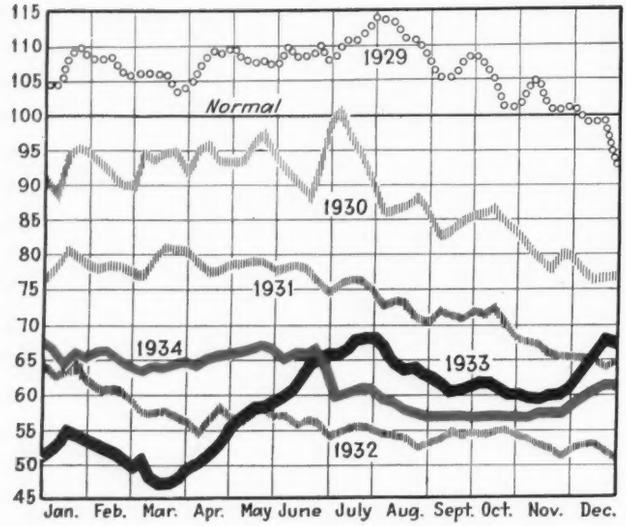
Production of Principal Food Crops in 1934

Quantities of important food crops raised in 1934 was less than in 1933, except in the case of potatoes. Value of these crops was in excess of the preceding year's. In the chart 1933 has been taken as 100 per cent, so that the length of the bars shows the percentage of 1933 production and value realized in 1934. Hay is included in the chart as an indication of the animal feeds situation which influences the production of meat and milk. (Data from New York Federal Reserve Bank.)



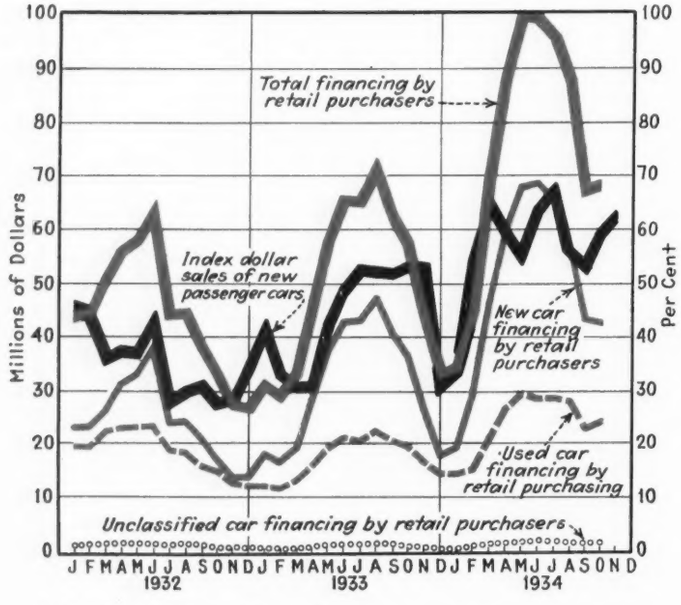
Activity in Foods

Is Related to All Other Activities



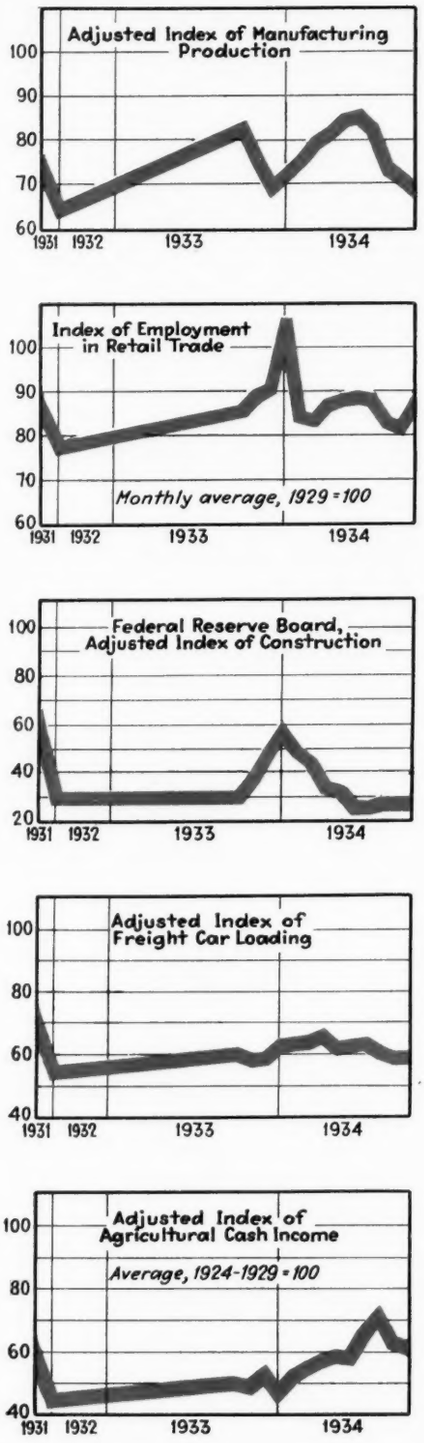
Index of Business Activity

As a regular feature of Food Industries the weekly index of business activity has been shown over a considerable period. The movements of this index are, however, more striking when the curves are superimposed, as shown here. Business Week supplied the data.


Total financing by retail purchasers
Index dollar sales of new passenger cars
New car financing by retail purchasers
Used car financing by retail purchasing
Unclassified car financing by retail purchasers
Millions of Dollars
Per Cent
J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D
1932
1933
1934

Adjusted Index of Dollar Sales of New Passenger Cars Compared to Financing of New and Used Cars in Dollars

Since good times are largely a matter of psychology, it is important to have a measure of the level of confidence prevailing among the public. Such a measure might be called an "optimism-pessimism" index. It is perhaps best shown nowadays by the extent to which the public enters the automobile market—particularly in the purchase of cars on time payments. Data is from Survey of Current Business, U. S. Department of Commerce.


Adjusted Index of Manufacturing Production
Index of Employment in Retail Trade
Monthly average, 1929 = 100
Federal Reserve Board, Adjusted Index of Construction
Adjusted Index of Freight Car Loading
Adjusted Index of Agricultural Cash Income
Average, 1924-1929 = 100
1931 1932 1933 1934

Activity Indexes

In addition to the activity indexes published each month in Food Industries (this month on pages 94 and 95), certain other indexes have a direct bearing on activity in the food field. The production level of all manufacturing industries, the activity of retail establishments as evidenced by the employment in retail trade, the amount of building construction, the freight car loadings and the income of agriculture are all indicators of activity in food processing. These indexes are taken from Survey of Current Business, published by the U. S. Department of Commerce.

Income of Food Manufacturers

FOOD processing operations during depression years have continued on a more favorable level than that of any other major manufacturing group. This is generally recognized in a qualitative way, and the income figures here given prove it quantitatively.

During depression years the number of food corporations has declined somewhat, but less markedly than in many other fields of activity. The shrinkage in number of food processing enterprises from 1929 to 1933, the last year for which data are available, has been less than 2 per cent. Gross income has decreased by many times this percentage and profits by a still larger margin. Fortunately, however, a definite upturn in profits, and a decline in number and magnitude of deficits are shown for the later years. Even 1933, which included the period of darkest business outlook, was better than the preceding year.

Dollars do not tell the whole story, however. The decline in commodity prices from the peak of 1929 to the recent lows was just about proportional to the decline in gross dollar sales of manufacturing companies. This conclusively proves that the tonnage of food consumed varied little in the worst year from the levels reached in prosperous times. In fact, if account is taken of the shift from high to lower priced foods that undoubtedly occurred, there is some evidence that the per capita food consumption may have been actually higher in 1932 and 1933 than in 1928 or 1929. Even the balance and variety of diet apparently did not decline, despite undoubted suffering and some tendency to malnutrition among limited numbers of individuals in some parts of the country. Curves for consumption (page 76) show existing trends largely undisturbed.

Statistics of food companies are given mostly for 1932, with the inclusion of some figures for 1933. In either case, the figures are latest available in reports of the U.S. Bureau of Internal Revenue.

Composite Balance Sheet of U.S. Food Corporations, 1932

(Compiled from 12,985 Income Tax Returns)

Assets

Cash	$455,423,000
Notes and accounts receivable	777,586,000
Inventories	832,372,000
Investments	1,116,249,000
Land, buildings, equipment	3,046,407,000
Miscellaneous	589,397,000
	$6,817,435,000

Liabilities

Notes and accounts payable	$768,952,000
Bonded debt and mortgages	753,653,000
Miscellaneous	364,928,000
Preferred stock	946,979,000
Common stock	2,713,778,000
Surplus and undivided profits (net)	1,269,145,000
	$6,817,435,000

Composite Operating Summary of the U. S. Food Industry, 1932

(Compiled from 14,282 Income Tax Returns)

Receipts

	Per Cent	
Gross sales	96.04	$7,009,505,000
Gross receipts from other operations	1.81	132,823,000
Interest	.42	30,581,000
Rents	.27	19,847,000
Profit, sale of capital assets	.02	1,756,000
Miscellaneous receipts	.87	63,167,000
Dividends, etc. (tax exempt)	.57	40,514,000
	100.00	$7,298,193,000

Disbursements

Cost of goods sold	73.62	$5,372,898,000
Compensation of officers	1.38	100,426,000
Interest	1.01	73,625,000
Taxes, not on income	0.93	67,897,000
Bad debts	0.57	41,020,000
Depreciation	2.75	199,954,000
Depletion	0.01	756,000
Other deductions	19.31	1,409,727,000
		7,265,503,000
Compiled Net Profit	0.42	32,690,000
	100.00	$7,298,193,000

Growth of the Food Industries as Indicated by Incomes and Deficits

(From Statistics of Income, 1932, and preliminary report for 1933, U.S. Treasury Dept.)
(Money figures in thousands of dollars)

Year	Total number of returns	Returns showing net income: Number	Gross income[2]	Net income	Tax	Returns showing no net income[1]: Number	Gross income[2]	Deficit	Number of returns showing no income data—Inactive corporations[1]
1923	13,590	8,388	7,499,284	411,716	43,812	5,202	1,528,149	118,480	...
1924	13,924	8,841	9,742,291	443,370	51,822	5,083	1,044,576	91,897	...
1925[3]	14,722	9,303	11,476,443	533,472	66,587	5,419	1,923,747	91,512	...
1926	15,008	8,950	10,553,213	475,074	61,429	6,058	1,762,832	93,052	...
1927	15,079	8,971	8,524,432	461,046	59,049	5,461	4,188,757	05,716	647
1928	14,965	8,844	11,551,431	518,092	58,391	5,405	1,497,403	77,818	716
1929	15,124	9,045	9,641,960	540,186	56,309	5,380	3,854,726	87,721	699
1930	14,847	7,897	7,637,397	436,451	49,869	6,328	4,377,338	128,498	622
1931	14,632	6,466	5,365,954	326,910	36,823	7,524	3,988,705	203,478	642
1932	14,968	3,629	4,430,704	199,387	25,201	10,653	2,858,953	207,211	686
1933	14,850	4,878	4,960,006	296,852	42,293	9,034	1,437,617	80,859	938

[1] Prior to 1927, returns for inactive corporations showing no income data were included with returns showing no net income.
[2] Gross income corresponds to total income as reported on face of the return, plus the cost of goods sold.
[3] Includes "Tobacco products."

Gross Incomes, Net Incomes and Deficits of Corporations in the Food Manufacturing Industries, 1932

(From Statistics of Income, 1932, U.S. Treasury Dept.)
(Money figures in thousands of dollars)

Industrial groups	Total number of returns	Returns showing net income: Number	Gross income	Net income	Net loss for prior year	Income tax	Returns showing no net income: Number	Gross income	Deficit	Number of returns showing no income data—Inactive corporations
Bakery and confectionery products	3,647	675	555,629	34,513	308	4,737	2,837	438,677	27,810	135
Canned products—fish, fruit, vegetables, poultry, etc.	1,811	312	164,007	21,086	322	2,830	1,375	328,491	51,972	124
Mill products—Bran, flour, feed, etc.	1,235	346	366,253	16,070	198	2,190	832	192,557	8,394	57
Packing-house products—Fresh meats, ham, lard, bacon; meat canning, by-products, etc.	793	178	1,486,461	18,141	13,610	622	596	1,109,554	19,108	19
Sugar—Beet, cane, maple, and products	230	69	404,490	25,724	486	3,344	141	159,292	53,786	20
Beverages—Soft drinks, cereal beverages, mineral water; wines; distilling	2,439	502	142,608	18,483	403	2,484	1,776	118,417	16,796	161
Other food products—Artificial ice, butter substitutes, cereals, coffee, spices, dairy products, etc.; food products, n.e.c.	4,813	1,547	1,311,256	65,371	1,106	8,995	3,096	511,966	29,344	170
Total food products, including beverages	14,968	3,629	4,430,704	199,387	16,433	25,201	10,653	2,858,953	207,211	686

Food Production

A Summary of Data from the 1933 Census of Manufactures

Industry*	Number of Establishments†		Number of Wage Earners††		Wages‡		Cost of Materials‡‡	
	1933	Per Cent Variation from 1931	1933	Per Cent Variation from 1931	1933	Per Cent Variation from 1931	1933	Per Cent Variation from 1931
Bakery Products	14,814	—16.4	182,098	— 0.6	$195,754,269	—18.2	$427,537,143	—15.4
Beverages	2,903	—31.7	15,120	—36.7	14,195,927	—52.8	41,863,867	—44.9
Canned and Processed Fruits and Vegetables	2,069	—18.3	88,883	+10.8	45,199,066	—16.3	268,077,385	—16.7
Cereal Preparations (Breakfast foods, prepared flour, and coffee substitutes)	100	— 9.9	7,075	+ 0.8	7,225,513	—19.7	54,425,939	—21.6
Chewing Gum	31	—11.4	2,445	+13.8	2,298,693	— 6.7	12,599,010	—25.1
Chocolate and Cocoa Products	54	— 1.8	6,460	+13.8	6,114,572	— 8.0	41,572,196	—16.9
Confectionery	1,217	—22.2	51,393	+ 0.3	32,970,702	—21.7	113,969,970	—21.3
Corn Products	28	—34.9	7,650	+15.0	8,574,654	+ 7.7	47,419,612	—12.2
Creamery Products								
Butter	3,161	— 6.1	16,365	+ 4.5	15,344,665	—17.6	315,131,918	—19.8
Cheese	2,155	— 9.1	3,136	+ 5.8	2,904,839	—18.5	46,429,136	—14.1
Condensed and Evaporated Milk	435	—10.3	6,344	+ 3.5	6,097,016	—15.9	96,899,131	—11.4
Fish and Sea Food, Canned and Preserved	262	—13.8	(e)10,689	+24.4	4,401,882	—15.7	25,811,987	— 9.1
Feeds, Prepared, for Animals and Fowls	709	—10.9	8,695	+ 2.9	7,770,620	—17.3	118,300,565	—27.2
Flavoring Extracts and Flavoring Syrups**	383	.....	2,281	.....	2,215,672	.....	20,400,816	.....
Flour and Other Grain Mill Products	1,932	—19.9	23,154	+ 1.4	22,623,814	—17.1	438,142,212	— 4.9
Ice Cream	2,118	—28.1	14,369	—19.3	16,223,031	—36.1	66,483,106	—39.8
Macaroni and Other Alimentary Pastes	296	— 4.2	5,498	+15.4	4,274,619	— 4.5	20,385,288	00.0
Malt	30	+11.1	848	+57.0	1,283,431	+48.1	20,362,250	+46.4
Malt Liquors**	524	.....	23,428	.....	33,407,173	.....	76,067,529	.....
Meat Packing Products	1,073	—11.2	113,011	+ 5.9	112,001,652	—16.7	1,199,274,507	—34.8
Oleomargarine and other butter substitutes	16	—50.0	840	—19.4	855,479	—36.7	8,311,995	—45.5
Poultry Killing, Dressing and Packing	437	—12.1	7,460	+ 6.8	4,850,602	—18.4	51,853,530	—33.2
Rice Cleaning and Polishing	50	— 9.1	1,636	+ 8.8	1,022,285	—19.9	22,696,668	—28.6
Sausage and Related Products	713	— 3.7	7,731	+23.9	8,209,024	— 1.8	62,572,265	+19.6
Sugar:								
Beet	84	+25.4	10,656	+70.7	10,969,646	+45.3	76,127,188	+22.1
Cane	67	— 1.5	2,371	+16.7	1,227,874	— 7.9	11,587,849	+15.8
Cane, Refining	19	00.0	11,440	— 3.5	12,237,321	—21.3	281,535,944	—16.2
Vegetable Cooking Oils and hard Substitutes	49	— 2.0	3,658	— 0.9	3,216,556	—19.7	68,149,045	—31.7
Vinegar and Cider	121	—11.7	845	00.0	723,545	—18.2	3,943,165	— 7.2
Vinous Liquors**	212	.....	1,224	.....	971,809	.....	9,301,400	.....
Foods Not Otherwise Specified	802	+ 2.5	10,625	+18.9	8,986,251	— 1.4	100,226,359	+11.0
Total	36,864	—15.1	647,428	+ 6.6	$594,152,202	—13.6	$4,147,458,975	—20.9

* Industry groupings are those used in the 1933 Census of Manufactures.

** Figures not comparable to those of preceding censuses.

† The Census of Manufactures does not enumerate or consider plants with less than $5,000 annual value of product in the census year.

†† Number of wage earners given is the average number for the calendar year, and does not include salaried officers and employees.

‡ Does not include salaries of officers and salaried employees.

‡‡ Cost of materials, containers, fuel and purchased electric energy.

Note: As the purpose of this preliminary report is to make the census statistics available at the earliest possible date, thus insuring their maximum current value, it has been compiled from the preliminary mimeograph sheets issued by the Bureau of Census. When the final, printed reports are issued, the figures will have undergone thorough checking and may be considerably revised. It is not likely, however, that changes made at that time will be great enough to affect the value, for practical purposes, of the figures given.

Total Value of Products§		Value Added by Manufacture ¶		Cost to Value △ Ratio (per cent)		Quantity Produced in 1933●	Notes
1933	Per cent Variation from 1931	1933	Per Cent Variation from 1931	1933	1929		
(a)$922,209,953	—22.5	$494,672,810	— 27.7	46.3	48.0	(a) 9,297,602,578 lb.	(a) Divided as follows: Bread, rolls, etc. 8,203,343,654 lb., valued at $529,307,105; Crackers, biscuits, etc. 1,044,565,200 lb., valued at 141,539,324; Pretzels. 49,693,724 lb., valued at 7,121,779; Other (weight not reported) valued at 244,241,745
(b) 111,308,433	—47.6	69,444,566	— 49.1	37.6	38.0	(b) 307,092,564 gal.	(b) Divided as follows: Carbonated beverages valued at $109,530,323; Cereal beverages valued at 4,110,842; Grape juice valued at 2,636,230; Other valued at 986,474. Note: Total value greater than in table, some coming from other industries.
438,820,931	—14.4	170,743,546	— 10.6	61.0	61.6	(c) 131,659,809 cases	(c) In addition to total cases of canned fruit and vegetables reported here, this industry produced an unreported quantity of dried fruits, vegetables; catsup, sauces, salad dressings, etc. The value of these products is $151,922,849, and is included in Value of Products in table.
110,322,718	—22.1	55,896,779	— 22.5	49.3	54.0	(d) 2,176,890,192 lb.	(d) Divided as follows: Breakfast foods 1,392,494,954; Prepared Flour 775,761,482; Other 8,633,756
41,654,480	—18.8	29,055,470	— 15.8	30.2	39.2	(e)	(e) Quantity not reported
67,754,144	—22.4	26,181,948	— 29.8	61.5	67.0	(f) 573,435,706 lb.	(f) Divided as follows: Chocolate products 409,589,962 lb.; Cocoa 119,434,888 lb.; Other 44,410,856 lb.
(g) 211,802,211	—25.4	97,832,241	— 29.8	53.8	54.8	1,187,700,113 lb.	(g) Includes salted nuts valued at $10,992,798
93,360,979	— 5.4	45,941,367	+ 2.8	50.8	62.8	(h) 3,196,519,065 lb.	(h) Divided as follows: Corn syrups 1,066,363,395 lb.; Corn sugar 826,923,828 lb.; Corn oil 122,657,461 lb.; Starch 1,029,342,245 lb.; Other 151,232,136 lb.
384,951,858	—16.9	69,819,940	— 0.6	81.9	85.2	1,745,335,028 lb.	(k) Includes: Condensed milk 274,676,114 lb.; Evaporated milk 1,919,560,690 lb.; Powdered milk and cream 341,353,300 lb.
56,968,562	—16.4	10,539,426	— 24.6	81.5	84.2	560,364,449 lb.	(l) Does not include fishermen or others employed in fishing among the reported wage earners.
131,086,300	—11.8	34,187,169	— 12.7	73.9	78.4	(k) 2,763,410,046 lb.	(m) Quantity not reported, also malt extracts and syrups no longer included.
40,191,056	— 5.1	14,379,069	+ 3.1	64.2	65.8	7,861,114 cases	(n) Includes only flour, bran, middlings and feed not reported elsewhere
157,838,626	—24.8	39,538,061	— 16.2	75.0	81.5	5,316,003 tons	(o) Does not include production by hotels, restaurants, or retailers.
54,352,623	.....	33,951,807	.....	37.5	.....	(m)	(p) Includes 1,870,585,162 lb. of lard.
574,160,134	— 4.0	136,017,922	— 0.7	76.3	82.4	(n) 155,154,052 barrels	(r) This industry embraces establishments engaged in the manufacture of sugar products direct from sugar cane.
158,422,494	—41.0	91,939,388	— 41.8	42.0	47.8	(o) 161,501,637 gal.	(s) This industry embraces establishments engaged in refining raw sugar produced outside the borders of the continental United States.
35,891,829	— 0.9	15,506,541	— 2.5	56.8	57.3	(e)	(t) Includes: Shortenings 959,478,434 lb.; Cooking Oils 191,370,569 lb.; Salad Oils 198,047,992 lb.
27,922,786	+45.1	7,260,536	+ 36.4	72.8	80.0	(e)	(v) In addition to quantities reported here the census records 488 small wineries that produced 21,635,402 gal. in 1933. Total production of all wineries therefore was 56,837,839 gal.
342,529,827	.....	266,462,298	.....	22.2	.....	26,009,427 barrels	(x) Total cannot be given as quantities of all individual products cannot be obtained.
1,487,920,253	—31.8	288,645,746	— 15.5	80.6	86.5	(p) 15,310,073,994 lb.	
12,765,620	—44.0	4,453,625	— 40.9	65.1	67.0	244,477,335 lb.	
66,152,742	—32.2	14,299,212	— 28.1	78.3	82.2	(e)	
30,683,380	—23.9	7,986,712	— 6.5	73.9	78.8	(e)	
86,228,685	+ 2.2	23,656,420	— 5.5	72.5	75.2	(e)	
127,133,272	+48.4	51,006,084	+118.5	59.8	66.4	1,801,014 tons	
18,233,202	+30.4	6,645,353	+ 67.3	63.5	69.1	(r) 321,403 tons	
337,075,225	—14.7	55,539,281	— 6.5	83.5	86.5	(s) 4,031,672 tons	
85,829,574	—25.6	17,680,529	+ 14.3	79.4	90.1	(t) 1,348,896,997 lb.	
6,630,508	—11.7	2,687,343	— 17.5	59.5	57.5	(e)	
24,084,858	.....	14,783,458	.....	38.7	.....	(v) 35,202,437 gal.	
152,742,629	+ 3.5	52,516,270	— 8.5	65.6	54.4	(e)	
$6,397,020,892	—17.1	$2,249,270,917	— 8.9	65.0	67.7	(x)	

§Value given is value of f.o.b., factory prices, and includes non-food byproducts whose quantity is not listed in table.

△ This value is obtained by subtracting value given as cost of materials from that given as total value of products.

¶ Ratio of cost of materials (given in table) to total value of products (given in table). These per cent ratios are only approximate, as slight changes occur from year to year in enumeration of cost of materials items.

● Does not include total products in cases where plants produce other than foods. For instance, hides and fertilizer are not included in meat packing total.

Food Merchandising

Summary of Preliminary Figures from the 1934 Census of Distribution

WITH processed foods, as with most other consumer goods, marketing takes place in more than one step. Wholesale establishments, jobbers, or food brokers pass the products through their hands, before the foods reach the shelves or storerooms of the retailer, or the restaurant table.

Marketing groceries at wholesale accounts for the activities of one-sixth of all the wholesale firms in the United States with a volume amounting to nearly one-quarter of all wholesale sales. Food merchandising is thus the most important division of wholesaling.

Foods and groceries are handled through every variety and type of wholesale establishment; but the vast bulk of this business, over 75 per cent, is done by those merchants who are essentially wholesalers. Manufacturers' sales branches and brokers do most of the remaining business. Details regarding these and other features of food wholesaling are shown in the accompanying table, which is based on the census taken during 1934 by the U. S. Department of Commerce, and shows business done in the calendar year 1933.

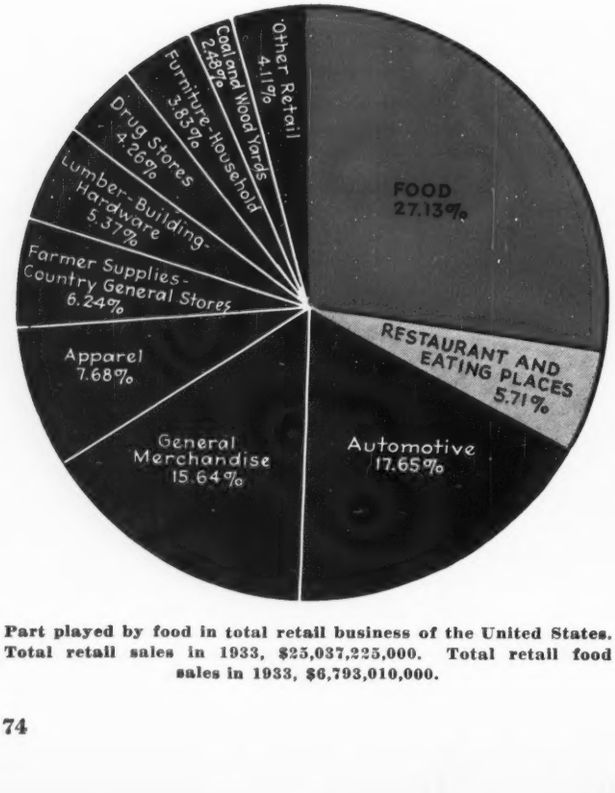
Not only did food wholesalers do a greater share of the wholesale business of the country in 1933 than in 1929, increasing from 13 per cent to 14.5 per cent; there was also a numerical increase in the number of whole-

Wholesale Establishments Selling Groceries and Foods—Census of Distribution of 1934

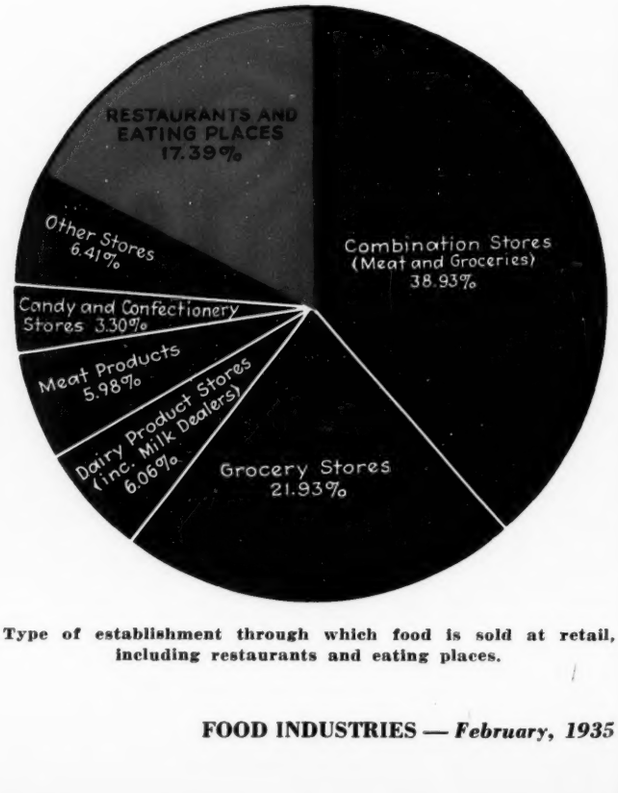
(All values expressed in millions of dollars)

Type of wholesaler	Number of establishments	Net Sales	Total Expenses — Amount	Total Expenses — Per cent of Net sales	Average number of full-time employees	Pay Roll	Stocks on hand end of year	Ratio of Food to all Industry
Wholesalers proper	18,088	$3,121	$400	12.8	142,216	$195	$360	.24
Manufacturers' sales branches, with stocks	3,185	1,613	204	12.6	51,201	84	75	.32
Manufacturers' sales branches, without stocks	232	190	26	13.8	5,725	10	*	
Chain store warehouses	288	1,173	51	4.3	14,114	23	45	.82
Assemblers and country buyers	138	27	3	9.7	943	1	9	
Cooperative marketing associations	14	24	4	16.9	970	1	4	
Elevators	3	*	*	8.8	5	*	*	
Brokers	1,377	1,175	16	1.4	4,032	8	2	.56
Commission merchants	121	47	2	4.0	537	1	*	
Export agents	17	5	*	4.3	43	*	*	
Import agents	32	12	*	1.6	63	*	*	
Manufacturers' agents	231	97	4	4.4	999	2	1	.17
Selling agents	99	24	1	5.5	329	*	*	
Other agents	8	18	*	3.0	145	*	*	
Total of above	23,833	$7,526	$713	9.5	221,322	$327	$499	
Total U.S. all wholesalers	164,101	$32,030	$3,697	11.5	1,094,878	$1,710	$2,967	
Ratio food to others	.15	.23	.19	....	.20	.19	.17	
Food wholesalers—1929	22,006	$13,239	*	8.1	.....	....	....	
Change 1929 to 1933 (per cent)	+8	—43	....	....	.....	....	....	

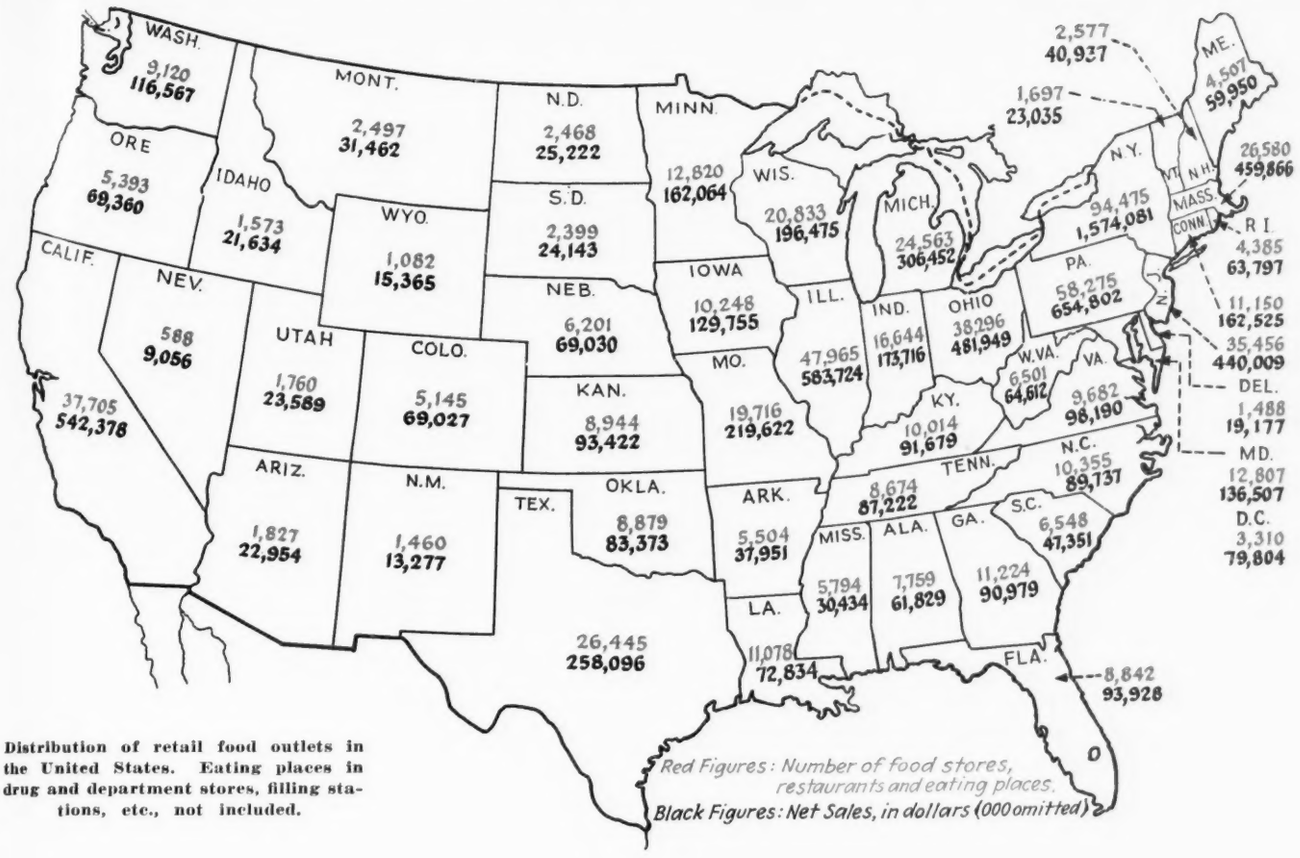
*Less than $1,000,000.



Part played by food in total retail business of the United States. Total retail sales in 1933, $25,037,225,000. Total retail food sales in 1933, $6,793,010,000.


RESTAURANTS AND EATING PLACES 17.39%
Combination Stores (Meat and Groceries) 38.93%
Grocery Stores 21.93%
Dairy Product Stores (inc. Milk Dealers) 6.06%
Meat Products 5.98%
Candy and Confectionery Stores 3.30%
Other Stores 6.41%

Type of establishment through which food is sold at retail, including restaurants and eating places.



Distribution of retail food outlets in the United States. Eating places in drug and department stores, filling stations, etc., not included.

sale outlets for foods. In 1929 this number was 22,006 while in 1933 it had increased to 23,833, a rise of 8 per cent.

RETAIL sale of food is now carried out by somewhat fewer stores than in pre-depression days. Nevertheless, it is still by far the most important retailing activity of the country. Establishments number 473,000 with more than 200,000 restaurants and eating places in addition. Sales of nearly $11 billion are 27 per cent of the nation's business, according to the Department of Commerce census already mentioned.

Decline in number of outlets, and also in dollar sales volume, was less for food establishments between 1929 and 1933 than for the average retail business. Only 22 per cent of total retail sales were in food shops in 1929 as compared to 27 per cent in 1933. Combination stores selling both meat and groceries did much more business, relatively, in 1933, reaching 47 per cent of the total dollar volume for all food stores. Separate grocery stores and separate meat stores declined sharply both in numbers and in business. Thus in retail trade, as in manufacturing, there is a trend which recognizes the essential unity of the business.

Studies of employment in retail stores bring out some interesting comparisons between 1933 and 1929. In the four-year period there was a marked falling off in full-time employment, the number of full-time workers decreasing from 3,833,581 to 2,703,325, or by 29.5 per cent. Parallel with this decrease was an increase that was almost as great in the number of part-time employees. Part-time employees in 1929 were 569,359, increasing in 1933 by 28.3 per cent, to total 730,327. While this increase in part-time workers by no means made up for the drop in full-time employment, as far as man-hours worked was concerned, the number of employers actively engaged in their own businesses increased during the period, taking up some of the slack. In 1929, the census reported 1,510,607 employers so engaged, while the 1933 census found that this number had increased to 1,574,341, or by 4.2 per cent. While these figures are for all retail stores, they exhibit trends that have also characterized the food field.

Retail Establishments Selling Groceries and Foods—Census of Distribution, 1934

(All values expressed in millions of dollars, except earnings in dollars)

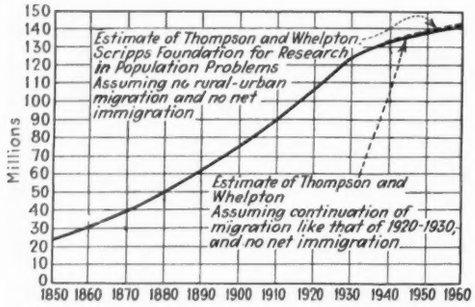
Type of establishment	Number in 1933	Net Sales 1933	Average number of full-time employees 1933	Total Payroll 1933	Average annual earnings per full-time employee 1933, dollars	Per cent change in Net Sales from 1929	Per cent change in number of establishments from 1929
Grocery stores	163,538	1,803	99,015	114	$1,019	—48	—15
Combination stores	140,372	3,201	221,225	253	1,035	—18	+22
Meat markets	38,344	492	35,035	44	1,133	—63	—24
Candy and confectionery stores	54,243	271	21,034	19	748	—53	—14
Dairy products stores including milk dealers	18,092	499	66,664	101	1,478	—38	+50
Beer and wine stores	3,767	17	1,238	1	984	....	....
Other food stores	55,560	510	60,319	62	944	—34	+12
Restaurants and eating places	200,335	1,430	356,338	262	673	—58	+49
Total of above	674,251	8,223	860,868	856	.....	—43	+ 9.6
Total for all retail outlets in U.S.	1,526,119	25,037	2,703,325	2,910	$986	—49	— 1

Population, Land and Food Supply

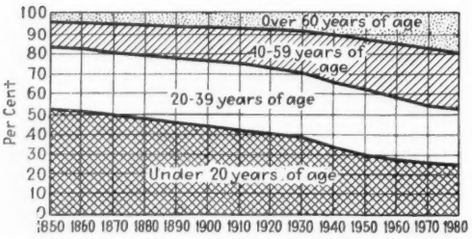
SINCE most food comes from the land, the way in which land is utilized and its productivity in grains, fruits, vegetables, dairy products and meat animals, are of vital concern to food manufacturers.

The population that consumes these foods also has a great influence on the food business. The relative food consumption of various groups in the population is closely tied in with land utilization. The human stomach does not grow with its owner's income—in fact, it tends to shrink a little. Thus, beyond the importance of mere numbers in food consumption is the consideration of what part of the population is urban, what farm, and what non-farm rural. Variations in the relative sizes of these groups, and the tendencies toward increase or decrease that they show, have an influence on trends in consumption.

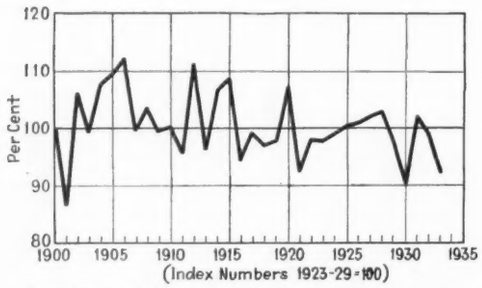
Charts shown on this page are from a report of the National Resources Board, released in January, 1935. They show strikingly the tendencies that are at work in population growth, size of age groups, location of population groups, per capita food consumption, and yield of agricultural land. From these charts, it would seem that the food industries are approaching a constant market due to declining rates of increase of population. Furthermore, if we assume a back-to-the-farm migration, the percentage of the population in urban life will decline. In fact, the actual numbers in cities appear likely to decrease. These trends limiting, or changing food markets will be offset only as there is a greater advancement of processed food to supplant the raw and unprocessed foods which formerly were almost the exclusive basis of old-fashioned country living.


Millions
Estimate of Thompson and Whelpton Scripps Foundation for Research in Population Problems Assuming no rural-urban migration and no net immigration
Estimate of Thompson and Whelpton Assuming continuation of migration like that of 1920-1930, and no net immigration

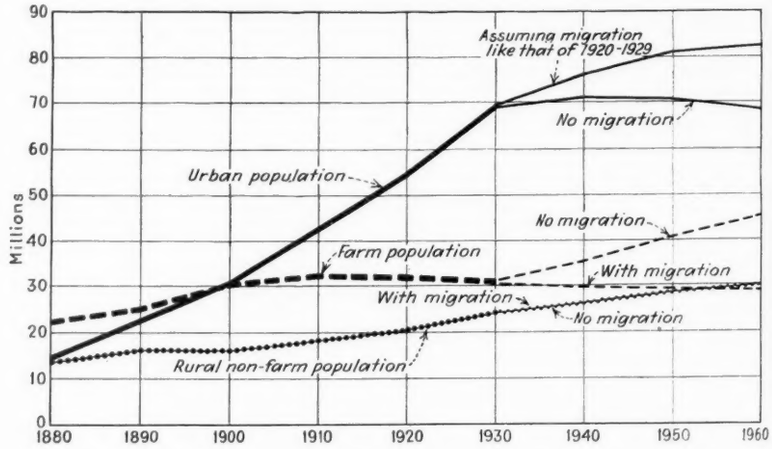
Growth of population of the United States from 1850 to 1930, with estimated growth to 1960.



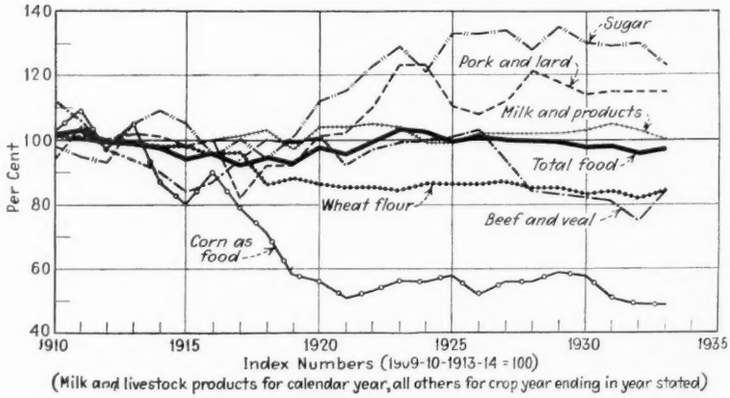
Per cent of total in various age groups in the population of the United States from 1850 to 1930, with Thompson's and Whelpton's "Low Estimate" for 1930 to 1980.



Composite yield per acre of twelve crops, 1900–1933. Average acre yields were slightly higher in the early part of the century than during the past 15 years. In this latter period, the trend is practically horizontal, except for the effect of the recent drought years.



Urban, farm and rural non-farm population of the United States, 1880 to 1930, with estimates for 1940, 1950 and 1960, as made by Thompson and Whelpton. The changes in the make up of the population as indicated by this chart forecast the future food consumption, in that rural farm and non-farm population tends to consume more than urban population.


Per Cent
Sugar
Pork and lard
Milk and products
Total food
Wheat flour
Beef and veal
Corn as food
Index Numbers (1909-10-1913-14 = 100)
(Milk and livestock products for calendar year, all others for crop year ending in year stated)

Changes in per capita consumption of six major foods and of all foods, 1910–1933. While the total per capita food consumption has varied but little for the period shown, there have been great variations in the relative position of individual foods. Corn as human food has decreased in use by one-half. Wheat flour consumption has decreased by a sixth, as has beef and veal. Milk products are now used to slightly greater extent, while sugar, pork and lard show increases of from 20 to 30 per cent. Combining all foods, it appears that normal acreage required for production of the American diet was about as large per person fed prior to the depression as prior to the World War, but that there has been a slight downward trend since 1923.

Commodities formerly sold in bulk or plain paper bags are now marketed in vari-colored packages carrying illustrative designs

New Packages *Increase Sales 200 Per Cent*

Modernistic colorful containers dramatize Larkin's "Pure Food" packages

By P. G. HARLOW

Manager, Food Manufacturing Department, Larkin Company, Inc. Buffalo, N. Y.

DURING the past two and one-half years Larkin Company, Inc., a long established mail-order firm, has redesigned more than fifty new-line food packages around old-line food products and increased sales as much as 200 per cent. Colorless cartons, plain tins, top-heavy jars have been replaced by modernistic colorful containers that dramatize the products they contain. These containers are more shapely, more utilitarian in themselves, and in some instances have re-use value.

The first package tackled was that of the cream, lemon, and chocolate pie-filling mixtures. The familiar plain one-color printed 4½-oz. carton was replaced by a three-color carton which dramatized the product by depicting an appetizing piece of pie made from the mixture. A 25 per cent increase in sales followed and the mixtures are selling better than a half-million cartons per year.

Shortly afterwards a new four-color carton portraying delicious dishes of chocolate and vanilla puddings took the place of the old one-color printed carton of which more than twenty million of a 4½-oz. size had been sold. The change resulted in a sales volume of more than a million packages per year, an increase of 15 per cent.

Chameleon-like, the family of Larkin's jell-gelatin dessert preparations changed from plain, single-color printed cartons to two-color 3¼-oz. cartons bearing dainty designs of jell-gelatin dessert servings. Sales leaped 50 per cent to more than a million jell-gelatin packages each year. Moreover, consumer acceptance of the new package prompted the manufacture of four new flavors: cherry, lime, orange and pineapple. The three original flavors were lemon, raspberry and strawberry.

Alluring color and significant design came next to a family of ten packages—imported spices: cloves, cinnamon, black pepper, white pepper, ground nutmeg, whole nutmeg, ginger, mustard, celery salt and allspice. These commodities, formerly ultra-conservative in their plain single-color, 3-oz. cartons, became colorful and eye-catching in two-color cartons designed to identify the contents by color and by picture of the product on the carton; mustard in yellow, ginger in its natural dark green, black pepper corns, white pepper corns, and so on. Sales are up 15 per cent. Matching the transformation of the spice family as packaged for the mail order market, the same spice

family as sold in Larkin stores shed their well-known plain cartons and donned natty black, cream and orange lithographed 2-oz. sifter tins designed to be utilitarian and artistic. Store sales of spices jumped 25 per cent.

Steaming cups of cocoa and a pot of chocolate, steaming casseroles of spaghetti and macaroni, and a miniature mountain of baking soda, respectively, adorn the new two-color ½- and 1-lb. cartons of cocoa, spaghetti, macaroni and baking soda which supplanted the old single-color unadorned cartons. Sales increased 10 to 25 per cent here and, so pleased was the company that it has brought out a new cocoa container, a 2-lb. fiber can with a six-color varnished label and a tin top and base. Also, consumer reaction to the new cocoa and chocolate containers brought about the manufacture of a product new to Larkin's "Pure Food" line—a ½-lb. cake of baking chocolate in a flat carton appropriately colored in cream and yellow with chocolate brown lettering and illustration of a chocolate cake. This is the newest Larkin packaged food and in it the company has carried the principle of product-dramatizing into the product itself by means of design imprints. The ½-lb. cake of chocolate is divided into eight 1-oz. squares and each square bears a molded design: a chocolate cake, a piece of chocolate pie, a dish of chocolate pudding, a chocolate ice cream sundae, a plate of fudge, a cup of hot chocolate and similar foods in which the chocolate can be used.

Under the name "Sundown," in blazing four-color cartons to symbolize the setting sun, five different teas, formerly sold in plain paper bags, have shown a sales increase of 50 per cent and are now selling at the rate of more than 500,000 lb. a year.

Even the prosaic, dried legumes, formerly sold only in bulk, have some color and modernism in the form of two-color cartons with cellophane windows which give a view of the product. Consequently, pea beans and marrow beans, green and yellow split peas, lima beans and green Alaska peas, pearl and granulated tapiocas, and rice are all selling 15 per cent better in Larkin stores.

Gone is the tall peanut butter jar with its anchor cap, narrow base and top-heavy proportions. In its place sits firmly the shorter, broader, diced glass jar of the pantry-shelf type, with screw top and with a shoulder that gives the jar re-use value in the home for canning or preserving purposes. The new jar has netted a 25 per cent sales increase.

Gone too is its old shelf-mate, the tall top-heavy jar of prepared mustard, also anchor-capped. In its place stands the artistic six-paneled glass jar, shorter, broader, more firmly based, and with screw cap lithographed in two colors to eliminate the jar label. Elimination of the jar label makes possible the Larkin catalog caption: "This jar can be set right on the table with perfect good taste. It saves the time and trouble of transferring the contents to a mustard jar for table use." As a result sales of prepared mustard have increased by more than 59 per cent.

So successful had repackaging proved in its glass line that the Larkin Company began manufacture of another new product—onion salt in a ribbed glass shaker with a sifter top and a two-color label bearing the design of an onion.

Most successful of all the new Larkin food packages is the coffee tin. Formerly packed in a plain 1-lb. tin with a slip cover and a plain printed label under the name of Larkin Blend Coffee, Larkin's highest-grade coffee went a-romancing with startling results. It came back with a container bearing a seven-color lithographed design depicting a delightful appearing Southern Belle enjoying a cup of coffee (the design alone cost the company $1,000), with a new lacquered top of the screw-lock type, and with a new name. Larkin's Old Southern Coffee. Sales increased a little more than 200 per cent. Yes, 200 per cent.

With the encouragement given us by consumer reception—a reception accorded wholly to the new container—of our fancy brand of coffee in its new garb, we have since put out two more fancy brands of coffee. They were formerly sold only in bulk. These two new fancy coffees appear in tins; one with a two-colored lithographed design; the other with a two-color printed label. Today we have a consumer demand for these two coffees which we never thought possible when we were selling them in bulk.

Of course we have gone after all our sales with hammer and tongs and there is no question but that our extraordinary efforts have had something to do with selling of these items. However, the changes in the packages have had more to do with increased sales than any other single thing we have done. There was a time when we thought any old package would do—and it did—but those days have gone forever.

Redesigned packages are shown below, with former designs at the top.

New Package *Lifts the Lowly Prune*

By C. B. PAPE
Products Department
California Prune and Apricot Growers Association
San Jose, Calif.

Benefits of new method of processing* retained by adoption of tightly wrapped carton with foil-backed label.

IN THE SALE and distribution of prunes we have had to face squarely the problem of meeting present-day demand for quickly prepared foods and of making certain that any change in our method of processing or packaging avoided deterioration in quality during the marketing period. As prepared foods gradually evolved to a point where housewives became accustomed to those which can be made ready for serving in the time generally required to boil a kettle of water, prunes lost a great many friends because overnight soaking was necessary to put them in best condition for cooking. As a result prunes have been selling at a low price; a cheap food cheaply prepared for market. To correct this market condition our basic problem was one of packaging the prune so that it would fit present-day requirements for quick preparation.

Solving this problem was not a "before breakfast" task, as prevention of deterioration and spoilage in products is one of the most difficult problems confronting the manufacturer. Many changes, which produce inferior quality and create large economic losses, can and do take place in foods wherever they are sold.

From the moment the product is placed in a package and sent on its way out of the factory production department, it is beset by air, light, heat, moisture, bacteria, mold, insects, and rodents and other things that may deteriorate or infest it, and in spite of the vast amount of research work which has been done in the past on the changes that take place in packaged foods, new wrinkles are being discovered every day. It even appears that we have as yet scratched only the surface in identifying the fundamental factors which govern these changes. Apparently the best course for any food manufacturer is to assemble all available facts; study them thoroughly; make his own experiments on his own merchandise, manufactured and packed under his own conditions; and chart his course from that point.

A great many excellent ideas offered us by food chemists and package designers cannot be utilized because of their impracticability. After all, a commodity can command only a certain price on the market. Therefore, there are limits to which the cost of packaging can go. Quite true, these limits can be stretched somewhat by sales and advertising but still the definite limits remain.

The average food product is at its best usually within a very narrow range of quality. If it is a product which is to be moist, then the extent to which it can be dried without deterioration in value is usually very small. The same thing applies to a product which depends on dryness for high quality. The greatest problem for the packaging field today is the development of an inexpensive moisture-tight air-tight container. The can does not always give the answer to the problem because the psychology of the consumer must be taken into consideration. It is not always a question of what the package costs the manufacturer.

Such factors are only a few of those that had to be faced when we undertook to stimulate consumer demand by making prunes one of the quickly prepared foods. In prunes the primary agents of spoilage are infestation, yeasts, and mold. Because of the high acidity of the fruit, bacteria have not been and are not a menace.

IN THE past a great many experiments have been conducted with prunes, but it was found that in most cases where prunes are packed in a moist condition they inevitably deteriorate, principally due to mold and to yeast fermentation; this in spite of the fact that all prunes are subjected to immersion in boiling water for a period sufficient to sterilize them thoroughly. It was

*U. S. Patent No. 1,976,961.

found that the only way they could be preserved was to keep them dried to a point below the danger line for the growth of yeasts and mold spores; which naturally infected them while traveling from the processing tanks to the cartons and which were also present in the containers themselves.

There was some market for canned semi-dried prunes. But the public did not show particular preference to the pack, due to two causes: first, the can was regarded as an expensive pack, and secondly, the prunes in the can were undoubtedly thought to be packed in a liquid condition. In any event, the pack did not become popular. Therefore, it was apparent that the container would have to be of a carton type to overcome these two impressions, psychological though they may have been.

It has been the custom after the prunes leave the sterilizing tanks to cool them on long conveyors, allowing the excess moisture on the outside to evaporate as steam. Contrary to this custom experiments were made in which prunes were quickly packaged and sealed in the carton after leaving the boiling water. Satisfactory results were obtained when the temperature was raised and subsequently a temperature developed in the carton apparently sufficient to give a sterilizing effect in the container.

PRUNES are known as a "pit" fruit. Experiment indicated that during the period in which the prunes are immersed in boiling water the pits become very hot and this heat is retained over a long period. They also revealed that after the prunes were packed into the container the heat increased, because of the residual heat in the pits, and that the higher temperature was maintained in the carton for some time after the carton had been packed in the case. It was also found that this process further tended to break down the cellulose structure of the prune and make it more tender, exactly the condition desired by the consumer. In addition, the slightly higher moisture content, which obtained because of the quick sealing of the carton, enabled these prunes to be prepared for serving in a very short period of time, not over 40 minutes.

It is generally recognized that whenever a product is packed in a container so that it will readily dry out, the moisture loss is greater from the outer surfaces of the product causing changes in the texture and composition of the tissues. In the case of the prunes, unless the moisture content is uniform throughout, any attempt to soften the flesh around the pit by cooking breaks down the outside portion excessively. That is why prunes cooked under ordinary conditions many times have an unappetizing appearance. On the other hand, if they are not sufficiently cooked they have a soft and tender outer layer with an inner layer that is difficult to separate from the pit. Hence the reason for the overnight soaking for the old-fashioned dried prunes.

Changes in the texture of the prunes were not the only advantages gained by the new method of packaging, as any food product packed in an ordinary container and subjected to atmospheric changes, high and low humidity, undergoes a constant change. Moisture is picked up by the product and then lost and at the same time other elements besides moisture, such as volatile flavors, are undoubtedly lost. This breathing effect was also greatly minimized.

Another point of deterioration which had to be given serious consideration is insect infestation. The best authorities agree that the tighter the package the less susceptibility to infestation from external sources. Also it is definitely thought that insects are attracted by odors, hence the tighter the package the less odor and the less likelihood of infestation. Of course, it must be borne in mind that the container itself must be sterile when it is packed, or there will be infestation from the inside. In our new method of processing and packaging prunes we have found that any infestation which develops is of external origin. It was also found that the degree of infestation decreased as we tightened the package.

In our search for both a moisture-tight and an air-tight wrap, and also one that would maintain the heat inside the carton as long as possible, we learned that aluminum foil had definite insulation qualities which meant that a package wrapped with this material would retain its heat for a longer period of time than if packaged in the usual type of carton. We also found that of all materials tested at the time for moisture-resistant and air-tight qualities foil was the most effective. As a result it was adopted when we first introduced our so-called "tenderized" fruits about two years ago. Furthermore, we found that even though the foil is not tightly sealed by adhesive it still retains a very high moisture-resisting quality. Apparently the passage of air between the two surfaces was slowed down considerably so that in many cases even though the foil wrapper was not tightly sealed on the carton it gave a more constant condition inside the carton than in the case of a wrap slightly less air-tight, but properly sealed. We also found that a small opening in the foil wrap did not result in as great difference in the interior conditions as did a large exposed area of a less air-tight material.

IT WAS, of course, essential in putting out a package of this kind to protect quality that all steps be controlled as much as possible: length of time in which the prunes were immersed in the boiling water, distance between the water bath and the package sealer, and temperature of the prunes at all stages. It is necessary to maintain a minimum temperature at the time the carton is sealed as a few degrees difference in sealing temperature affects the result considerably. The fact that such a product, ordinarily susceptible to spoilage, remains in good condition for long periods of time under varying storage and marketing conditions definitely proves that it was sterile when packed and that the correct minimum sealing temperature has been determined for the prunes under the chosen packaging conditions.

Fundamentally, it is not just a question of packing the fruit hot, but of packing it at a temperature sufficiently high and maintaining that temperature sufficiently long to sterilize effectively not only the fruit itself but the interior of the container. However, one must keep in mind the particular characteristics of the product treated, its susceptibility to spoilage, and its adaptability to sterilization under conditions such as have been outlined.

Foiled box which solved packaging problem of Head Candies, Inc.

NEW PACKAGES . . . NEW PRODUCTS

Foiled Box Keeps Candy

ALUMINUM foil wrapping has come to the rescue of another food product. In the form of a highly decorative heat-sealed, outside wrapper, it has been applied to the cardboard carton used by Head Candies, Inc., Atlanta, for its peanut brittle. This company has always experienced difficulty in keeping the brittle fresh and crisp without resorting to glass jars or sealed tin cans. With the climatic conditions prevailing in the South, the candy would absorb moisture and become sticky. This trouble no longer is experienced, and the product also has additional protection against heat and light rays. The comparative efficiency of the new package is indicated by test data. It and a container with a heat-sealed, wax-paper wrapper were exposed to a relative humidity of 95 to 100 per cent and a temperature of 80 deg. F. for 25 days. In that time, the peanut brittle in the paper-wrapped carton absorbed 5.19 per cent of moisture while that in the foil-wrapped carton took up only 0.84 per cent.

Three Ideas in Packages

BY INTELLIGENTLY considering the use to which consumers put their packages, Morey Mercantile Co., Denver, has hit upon some sales-getting ideas. In packaging its spices, it uses a container with one side bare of advertising matter, the name of the spice alone appearing at the top of the tin. This makes the container a suitable shelf canister. The company's vanilla package carries an extra stopper which has a flanged top and is easy to insert and remove. This replaces the original tightly plugged cork which sometimes is broken on removal. Desiring to bring to the attention of consumers the recipes for its canned corn, the company has printed these on circular labels which are pasted on top of the can.

Makes Avocado Mustard

SOMETHING exotic in condiments has been developed by Morehouse Mustard & Supply Co., Oakland, Calif. It is a combination of avocado and mustard containing not less than 50 per cent of avocado. To include this amount of vegetable matter with the mustard and have it hold up requires some manipulation. In the first place, to obtain in good condition a supply of the highly perishable avocado, the Morehouse company had to work out a process of treating it. This involves skinning, pitting and pulping the fruit and mixing it with a solution of salt and vinegar. When this pulp is combined with the balance of the mustard formula, a quantity of salt and vinegar is added which will preserve the finished product and yet not dominate the flavor. Tested in an incubator up to 300 deg. F., the avocado mustard showed no signs of deterioration, the company reports. The product is packaged in modernistic glass jars, made by Owens-Illinois Pacific Coast Co.

Whole Bran in Clusters

WHOLE-BRAN cereal in cluster form has been introduced by Battle Creek Food Co., Battle Creek, Mich. Designated Krusty Bran, the cereal contains 5 per cent of wheat germ and is flavored with malt and sugar. It is packaged in 6-oz. cardboard cartons, loose-wrapped with heat-sealed wax paper. Krusty Bran is rich in vitamin E and contains vitamins B and G.

Georgia Yams in Tin Cans

AGAIN the tin can does a service for mankind. It is now carrying to the consumers of the nation the Georgia-improved Puerto Rican yam, said to be the most luscious sweet potato grown. Before being put into cans, this yam could not be shipped afar, except for a short time during the year, and still re-

tain its quality. It is Down South Canning Co., Atlanta, which introduced the canned sweet potato. The company makes "candied yams" and "sweet potato dessert." In preparing the candied product, uniform slices 2 in. long and of square cross-section are cut from the heart of the potato, and these are put up in sugar syrup. The dessert is made from the residue of the potato.

Dixie Family in New Dress

IN BUILDING up its line of Dixie brand cheese and mayonnaise products, North Shore Food Products Co., Chicago, gave no thought to uniformity in its packages. But when the company recently decided to go after national distribution it felt that all the products should be tied together by a similarity in the containers, so the packages were redesigned. Now each variety of cheese and mayonnaise is identified by its individual colors; yet each resembles other varieties through a common arrangement of color areas and brand-name design. Macnair-Sells, Chicago, redesigned the packages.

1. Transparent Bags for Rice

BELIEVING that more rice can be sold to the American public by emphasizing quality, Louisiana State Rice Milling Co., Inc., Abbeville, La., has adopted transparent cellulose bags for its top-quality, Water Maid brand. And an effective package has been created by using red and blue printing against the white background of the product. Packing rice for shipment requires a strong container, so the company used a heavy-weight duplex bag for its first packages, these containing 3 lb. With a few minor adjustments in sealing this proved to be a perfect shipper, and it gained such a consumer reaction that the company has extended the idea to 1-lb. packages. While it costs more to package the rice than to distribute it in bulk, the company finds that the retailer saves in shrinkage and in packaging expense, enabling him to cut his margin. This new package has been a big factor in getting wider distribution for rice, according to the Louisiana company.

2. Extract Bottle Goes Arty

MUCH IMPROVEMENT has been made of late in extract bottles, but it remained for Shirriff's, Ltd., Toronto, to bring out one that really has class. This container has a large base and a long narrow neck which terminates in a molded plastic cap. Since the extracts themselves have "eye appeal," the label has been kept down to a neat die-cut shape. In addition to appearance, the container has the advantage of being difficult to upset. Furthermore, the cap is easy to open. Shirriff's find that the cost of the new bottle is about equal to that of the old panel type, once the necessary molds for the bottle and cap have been made. The company also says that the new container has definitely been a success in attracting customers.

3. Sundae With Spoon, Napkin

HAVING conceived the idea of a "Strolling Sundae" comprising packaged ice cream with hot fudge poured over it, it became the problem of Johnston's, Milwaukee candy and chocolate manufac-

North Shore Food Products Co. has made a harmonious family of its individual packages.

turer, to devise a package that would accommodate not only the ice cream and the fudge but also a spoon and napkin. The answer to this is a cardboard carton developed by Sutherland Paper Co., Kalamazoo, Mich., and the Menasha Paper Products Co., Menasha, Wis. The carton has a compartment at the top for the spoon and napkin so that these are kept dry.

4. Modernizes Candy Cartons

SCRAPPING everything except the coat-of-arms, John O. Gilbert Chocolate Co., Los Angeles, has completely modernized its candy cartons. A deluxe package is the result. All the company's brands, with the exception of one, are now in square cartons of effective modern design. The cartons are covered with coated paper, are lettered in black in most cases, and have a black base about ½ in. thick to set them off. The illustration shows a Gilbert package after it was redesigned.

5. Prepared Mix for Fudge

A PREPARED chocolate mix for home-made fudge has been placed on the market by Robert A. Johnston Co., Milwaukee, Wis. The consumer only needs to add a little boiling water to the preparation, mix thoroughly and let it cool. The mix is packaged in a double-walled paper bag containing 1 lb. The container is closed by rolling the top, a tin insert being bent over the roll to keep it closed.

6. Six-In-One Package

SHIRRIFF'S, LTD., Toronto, whose new extract container is described elsewhere in this department, has another unusual package. It comprises six triangular boxes nested together in a hexagonal cardboard base. Each box contains a different kind of dessert mixture. This package has proven quite successful, they say.

Peppercream—a Seasoning

PEPPER in a new form, Peppercream, has been introduced by William J. Stange Co., Chicago. Peppercream is a concentrated seasoning in a dry, soluble, cream-colored powder form. It is attributed with greater seasoning properties than white pepper and with the quality of giving the full flavor of black pepper without introducing the black pepper appearance. The process by which it is made involves special treatment of the oleoresinous material of the spice and the blending of this material with neutral soluble ingredients.

New Way to Crate Celery

SOME of the celery shipped from Florida this season is so packed as to reduce the weight by about 25 per cent with no loss of edible celery. The shippers are trimming off tops and packing the stalks in an "alternate-reverse" manner in a new type of crate. Trimmed to a length of 16 in., the stalks are arranged in layers with the tops of alternate layers pointing in opposite directions. Since the tops cushion the butts of the alternate layers and since the new non-bulging crate affords good protection, the product is not damaged in transit. And with the new pack, 160 more crates can be placed in a refrigerator car. Tests to determine the moisture loss of the trimmed celery showed that it amounted to only 15.8 per cent under conditions producing a loss of 20.2 per cent in the untrimmed. The crate used is a development of Package Research Laboratory, Rockaway, N. J. Made of wood, it is bound on all sides by steel wire. Supplied in one-piece shooks, it is easily set up and closed, the ends and top being secured by bending the looped ends of the binding wires to form hooks.

Beverage from the Papaya

A HEALTH beverage has been concocted from the papaya, the "motivating" health fruit of Florida and the Tropics. It includes the juices of other fruits, is labeled Pa-poya and is made by the Pa-poya Co., Inc., Miami. The juice from which it is prepared is extracted by a hydraulic press and filtered through three stages, the last of which is germproof. Honey is added, but no artificial preservatives, flavors or coloring materials. The product is sold both as a finished beverage and as syrup.

Foil Solves Fig Problem

NO LONGER is Cresca Co., New York, bothered with the problem of weight loss in its dried figs. This loss, which formerly occurred between the packing plant and the consumer, has been overcome by proper packaging. The company has adopted metal-foil bags which are enclosed in cartons.

Instant Lecithin

LECITHIN that is soluble in water and in oil is being marketed by Jungmann & Co., Inc., New York. Known as lecithin hydrate, the product's instant and complete solubility reduces the amount that has to be employed, the manufacturer states. The new lecithin, which retains the properties of vegetable lecithin, is intended for use in foods and beverages.

PACKAGING EQUIPMENT AND SUPPLIES

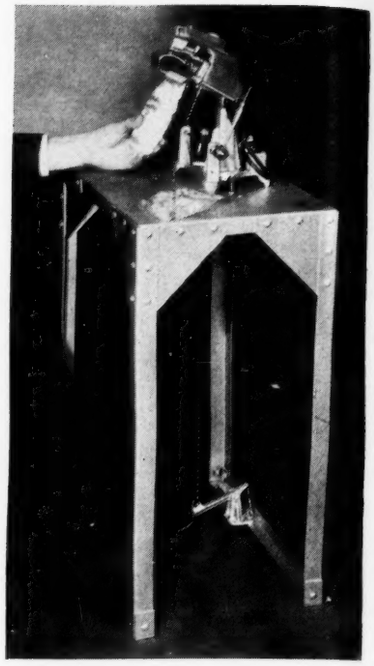
Heat-Sealing Cellophane

For closing envelopes of M.S.T. cellophane, heavily waxed glassine bags, or other suitable "heat sealing" material, a line of "Sealtight" machines has been developed by Heat Seal-It Co., 3836 W. Girard Ave., Philadelphia, Pa., and are now employed by a number of confectionery and other food plants.

Sealing is accomplished by controlled heat and pressure, applied to the material of the bag itself. At the same time a series of horizontal crimps is made in the material. The resulting seal is said to be airtight and moisture-proof, and to withstand rough handling.

Machines for carrying out this process are available in several models. Model 12 is a foot-power machine, with capacity up to 700 sealed bags per hour. Model 28 is a motor-driven machine, similar to Model 12, but with capacity up to 2,400 sealed bags per hour. Model 65 is a fully automatic model with conveyor for handling the bags. It has a capacity varying from 60 to 70 bags per minute. There is also a "Flatop" model for sealing wrapped packages, boats and boxes.

All models have thermostatic control, which maintains the heat at the desired point, also a heat indicator, and a pilot light to show when heat is on. Electric heat is used in these machines.



Foot-power machines to heat-seal cellophane bags.

Transparent Rubber Wrapping

Users of transparent wrappings now have available a brilliantly clear material for which superior moisture-resisting properties are claimed.

In chemical composition it differs widely from other well-known transparent wrappings in that its base raw material is first-grade crude rubber. Creasing, wrinkling, exposure to excessive moisture and to reasonable heat, and stretching are reputed to have no deteriorating effect upon its "moisture-proof" qualities.

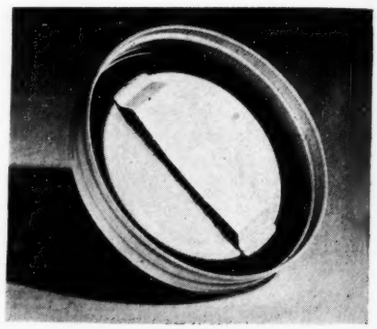
Designated as "Pliofilm" by its manufacturer, Goodyear Tire & Rubber Co., Akron, Ohio, it is the result of several years of investigational work and embodies unusual qualities in addition to being moisture-resistant. Among these properties is its high resistance to tearing, to puncture when drawn over corners, to changes in temperature and humidity during wrapping machine operation, to action of oils or fats, and to general rough usage. Heat sealing is done within a temperature range from 105 to 130 deg. C., no adhesives needed. It is obtainable in rolls, slit to order, ½ to 40 in. wide and in sheets cut to size.

Vacuum Closure

As a closure for use with vacuum-packed foods in glass, Armstrong Cork Products Co., Lancaster, Pa., is now marketing the "Vacu-Vent" screw cap. This is a venting cap of simple construction, said to be able to hold a 25 to 27 in. vacuum.

The new cap is made of four pieces, all shown in the accompanying illustration, as assembled for use. The continuously-threaded shell of the cap is formed with an easy-working, corrugated diaphragm construction extending all the way across the top. In the center of this, a hole is punched. The spring clip on the inside is held in place by curved extensions on each end. It, in turn, holds a rubber valve ring in place. The rubber sealing ring completes the assembly.

The diaphragm is formed to normally press downward, sealing the rubber valve against the clip. When pressure is generated within the container, the diaphragm is pressed upward, and the vent opened, releasing the pressure.



"Vacu-Vent" vacuum closure for glass packing.

Wrapping With Wax

A new wrapping material that may find application in the packaging of foods has come out of the research division of Marathon Paper Mills Co., Rothschild, Wis.

Largely of wax composition, this material, called "Parafilm," is practically impervious to water and to humid atmospheric conditions. With the application of heat and slight pressure it can be shaped as desired and will form water-tight seals. If a sheet or strip of "parafilm" is placed between sheets of paper or cloth and heat applied to the surface with a little pressure a strong bond forms between the "parafilm" and the paper or cloth.

New Packaging Catalogs

Can and Carton Machines—Equipment for filling, weighing and sealing cartons; for making, filling and handling tin and paper cans; and for cutting off paper tubes to can length, all made by J. L. Ferguson Co., Joliet, Ill., are the subject of three new "Packomatic" bulletins.

Gummed Tape Sealing Machines—Called the "Counterboy," described by Better Packages, Inc., Shelton, Conn., in a new illustrated folder, which also describes package sealers and labellers.

Glues, Pastes and Gums—Two new booklets have been issued by National Adhesives Corp., 820 Greenwich St., New York, N. Y. One deals with methods of gluing cellophane, Sylphrap, Protectoid and Kodapak, the other with methods of preparing and using various adhesives.

Closures for Vacuum Packing—A self-venting screw cap for vacuum use, the "Vacu-Vent," is described in a booklet issued by the Closure Division, Armstrong Cork Products Co., Lancaster, Pa.

Milk Bottle Filler—A gravity milk bottle filling and capping machine called the "Nuline" is described by Cherry-Burrell Corp., Chicago, Ill., in a new catalog.

PROMOTING THE PRODUCT

HILLS BROS. CO., New York, finds that retailers displaying Dromedary dates sell four times as many packages as when the product is put on the shelves. Hills Bros. is offering grocers cash prizes for ideas that will help retailers increase sales.

KELLOGG CO., Battle Creek, Mich., will spend more for sales promotion in 1935 than in any previous year. The company reports that its volume has not only been maintained but increased during the depression by aggressive merchandising.

BORDEN SALES CO., New York, will spend about $1,000,000 this year in product promotion, dividing it in the proportion of about 45 per cent each for magazines and radio and 10 per cent for newspapers. Condensed and evaporated milk and mince meat will be emphasized.

PILLSBURY FLOUR MILLS CO., Minneapolis, is promoting a $10,000 prize contest in 101 publications and two radio programs. Contestants are to write a statement about Pillsbury flour.

HYGRADE FOOD PRODUCTS CORP., New York, on Jan. 14 launched a 52-week newspaper campaign, featuring All-Beef frankfurters. Started in New York, the campaign will be extended to adjacent cities.

DONALD W. WHITE, former director of American Institute of Food Distribution, has been placed in charge of the Chicago office of General Marketing Counselors. This organization recently became affiliated with Braun & Co., to offer national marketing consultant service.

SEEMAN BROS., INC., New York, is distributing to housewives a leaflet, "Let's Have a Tea Party," giving suggestions on serving and stressing the quality of White Rose tea.

CALIFORNIA PACKING CORP. has started an intensive advertising campaign to inform consumers that pear prices are low.

SOUTHERN RICE INDUSTRY, New Orleans, is distributing a booklet "The Use of Rice on the Hospital Menu."

RETTBERG'S, Baltimore, gives away 25 "double" movie tickets weekly, for the best rhymes about its meat products.

NATIONAL OIL PRODUCTS CO., INC., Harrison, N. J., has worked out a campaign to promote vitamin D bread, supplying to the bakers material for any form of advertising. The campaign will link vitamin D bread with healthy teeth.

GENERAL BAKING CO. will continue this year its musical comedy program over the C.B.S. network on Sundays. The program, featuring Julia Sanderson and Frank Crumit, promotes Bond Bread.

Glorifying Beer

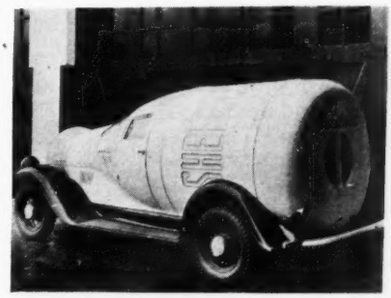
Two Ziegfeld Follies beauties in the act of proving that beer does no harm to the feminine figure. To dispel that idea, Heidelberg Brewing Co., Covington, Ky., has arranged with a group of Follies girls to consume six glasses daily for five months. So far no weight increase has been reported, and the test is half over.

WILLIAM S. SCULL CO. is giving with each jar of Bosco a coin bank for children.

DUN & BRADSTREET report that the total of radio homes in the United States is now above 20,000,000, more radios having been sold last year than in any previous year.

L. R. HAWLEY, manager of the Quaker Oats Co. branch at Memphis for 14 years, has been promoted to advertising manager of the entire company, with headquarters in Chicago.

NATIONAL BROADCASTING CO., INC., reports that a study made by Psychological Corp. reveals that 53.2 per cent of 705 grocers questioned name radio as the best medium for promoting nationally advertised brands. N.B.C. has issued a portfolio of radio artists available to broadcast advertisers.



Two-Purpose Truck

In addition to being practical for special deliveries, the milk-bottle body has evident sales promotional value. Sheffield Farms Co., New York, recently purchased ten of the units, and Borden Co. also is operating some. The Sheffield "bottle" body carries 20 of the 12-quart cases.

C. E. TAYLOR recently was made general sales manager of Lance Packing Co., Charlotte, S. C., succeeding R. H. Bostick, deceased.

UNITED STATES BREWERS' ASSOCIATION, while disappointed in the response to its recently launched research, advertising copy and "educational" service to brewers, will continue with it. The service fosters cooperative advertising featuring the attributes of beer.

KELLOGG CO. is sponsoring a Thursday-evening program, "College Prom," over the N.B.C. "blue network," featuring Ruth Etting, "Red" Nichols and various sports stars.

LOOSE-WILES BISCUIT CO., Long Island City, N. Y., will use color ads in magazines and large space in newspapers, beginning this month. "Sunshine" biscuit newspaper ads are carrying a column of helpful hints for the housewife, called Food Casts.

A. J. AMOS has been appointed by General Foods Sales Co., Inc., New York, as manager of national accounts, a new sales activity. He will contact national outlets, such as hotel chains.

CALIFORNIA FRUIT GROWERS' EXCHANGE is selling the idea that Sunkist Oranges are bigger and juicier than ever, using 61 newspapers in 41 cities.

SALADA TEA CO., Boston, plans a 15 per cent increase in newspaper advertising this year. It reports a marked improvement in sales during 1934.

UNITED PRUNE GROWERS OF CALIFORNIA are endeavoring to get support for continuation of the national advertising campaign which for the past three seasons has been effective in increasing sales of California prunes.

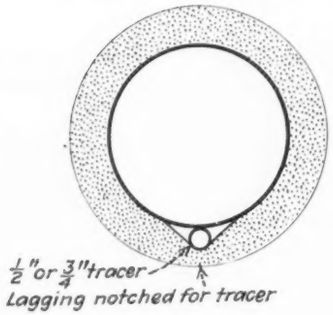
NATIONAL BISCUIT CO., New York, has inaugurated a weekly advertising campaign in about 500 newspapers, this to continue through February and March. It emphasizes Shredded Wheat as a year-around cereal.

BETTAR ICE CREAM CO., Baltimore, is giving away with each 15-cent purchase, individual items of a 22-piece, crystal-cut luncheon set.

J. R. MARTIN, Quaker Oats Co., heads up Cleveland Association of Manufacturers' Representatives during the coming year. Frank M. Lupy, Carnation Milk Sales Co., is a vice-president.

WILLIAM WRIGLEY, JR. CO., Chicago, probably will spend about $7,000,000 for sales promotion during 1935.

IDEAS . . . FROM PRACTICAL MEN



Tracer Prevents Pipe Freezing

MANY plants experience trouble from freezing and bursting of pipe lines in winter. Such occurrences are costly in time and expense, but can be avoided if reasonable care is taken to protect exposed pipes.

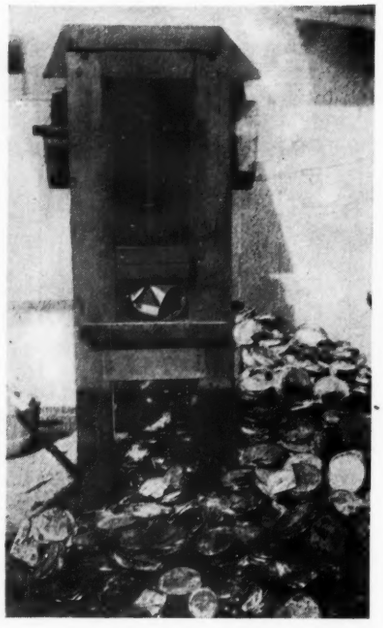
All parts of the piping system not in service should be drained. When draining, care should be taken to remove all liquid from pockets in the lines, valves and fittings. In a well-designed system all lines are graded or sloped to the drainage points.

Lines in which the flow is reasonably constant can be protected by lagging with insulating material. Exposed lines in which the flow is stopped periodically will sometimes freeze even though heavily lagged. These lines can be protected by installing a ½ in. or ¾ in. steam line next to the pipe and under the lagging. It is important that this small line, or tracer, be sloped downward and a trap placed at its lower end to insure the removal of condensate and air. To secure the greatest protection, the tracer should be installed on the lower side and in contact with the line it protects.—SAMUEL HENNY, *Sandusky, Ohio.*

Flattening Used Cans

A HOME-MADE device for smashing used cans flat has been employed for some time at the plant of Gibson Canning Co., Gibson City, Ill. As will be seen in the photo, the frame is made of heavy timbers. Mounted on the frame is an old automobile crankshaft, driven through gearing. This crank operates a plunger of considerable weight.

Used cans of No. 10 size come from the can-cutting department, where their contents have been removed, down a conveyor, and are



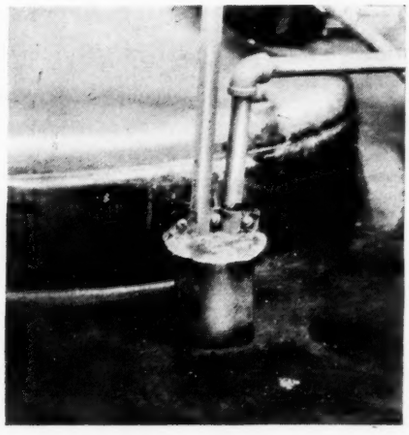
delivered to the anvil under the plunger. Here the plunger smashes them flat and they are then removed to the scrap pile.

How to Defrost Coils

REFRIGERATING coils of the pipe type can be defrosted effectively by diverting to them the hot, uncondensed gas discharged from the compressor. When this is done, the coils act as a condenser, absorbing enough heat from the gas to melt the coating of ice. In using this method, however, care should be taken to throttle the suction stop valves to prevent any liquid going to the compressor.

Pipe Umbrellas

TO prevent water from dropping down your neck when you are on the ground floor and the freezing room above is being washed down, we have found it useful to improvise pipe umbrellas for use about pipes passing through the floor.



The one shown in the illustration is made of four pieces of No. 18 gage metal, welded, making two halves that can be fastened in place about the pipes with three stove bolts.

For single pipes we use a one-piece model, cone-shaped, and fastening with two bolts. This type is not shown.

We use these "pipe umbrellas" on brine, water and steam pipes, and on electric conduit.—CARL RICHARDS, *Chicago, Ill.*

Preventing Sun Glare

TO PROTECT workers along the east and west sides of its plant against glare of the morning and evening sun, American Chicle Co., Long Island City, N. Y., uses light diffusers over the windows. These diffusers are nothing more than white muslin mounted upon wooden frames. Hung about two feet from the window, they effectively prevent glare yet do not shut off the light.

Mapping Large Rooms

IN large storage or shipping rooms, a system of marking bays for easy location and identification will prove advantageous. Such a system, introduced in a plant of the Jewel Tea Co., Inc., Barrington, Ill., embodies the use of letters and numbers on the columns supporting the ceiling. The letters designate latitude, and the numbers longitude. Thus, the column marked C-4 would be in the third row across and the fourth row down.

Send In Your IDEAS

Cooperation is the keynote of the day, and you can help yourself and others by using this page for exchanging helpful information about how things are done in the plant. For every idea printed, *Food Industries* will pay $5 or more.

Delicate Materials
Demand Careful Handling

Nuts, coconut, chocolate, spices and sugar require maximum care in container choice, shipping and storage conditions, and pest control to reach the food manufacturer in good condition

By HARRY STINER
Los Angeles, Calif.

FRUITS and cereals were discussed in an article in FOOD INDUSTRIES for January, 1935, dealing with container choice, shipping methods, storage requirements, and the effect of pest control. In this article the discussion is continued, covering nuts, coconut, sugar, chocolate and spices.

Nuts

CONTAINERS

For almonds use double jute bags.

For blanched almonds, brazil nuts, sliced brazil nuts and cashew nuts use paper-lined wood boxes.

For filberts use cotton-lined jute bags.

For peanuts, pecans and walnuts use jute bags.

For pecan and walnut meats use fiberboard boxes with corrugated interliners.

For almond paste use paper-lined fiberboard boxes.

SHIPPING

Nuts and nutmeats should always be transported in clean, dry, tight vehicles, free from insects or mites. If taken from cold storage for shipment, they should be kept under constant refrigeration, and not permitted to rise more than 10 deg. F. during transit, after which they should be immediately returned to their former temperature. This prevents the accumulation of moisture and consequent development of mold. When taken from ordinary temperatures, nuts may be shipped at prevailing temperatures, but time in transit should be held to a minimum.

Because nutmeats are delicate, and their appearance is important in use, greatest care should be maintained in handling them.

STORAGE

Nuts and nutmeats in insect-proof containers, and known to have been properly fumigated and free from live insects, may be stored in a cool, dry place. Nutmeats of doubtful condition, or in loosely-built containers, as well as containers that have been opened for use, should be held in dry storage at 32 deg. F. until just before using. Whole nuts in ordinary containers may be held in normal storage for short periods, but if stored for long should be occasionally fumigated.

PEST CONTROL

All nuts and nutmeats are attacked by various storage beetles, moths and mites. If even slightly moistened, they are subject to mold and rancidity.

Beetle-infested meats appear scarfed and eaten out in places and dusted over with a brown frass. Moth-infested meats have a similar appearance, and also a silken web intermingled with the meats and clinging to the container. Mite-infested meats are covered with a brown dust and generally have a rancid odor. Heavy mold can be seen, while mold can be detected by the stale musty odor before it is visible. Rancidity in nuts is akin to putrefaction, destroys the food value, natural odor and flavor and renders the material unfit for human consumption.

Adequate fumigation with an approved gas will effectually kill all insects and mites in the nuts but, of course, will not remove them; therefore fumigation should be used before infestation becomes evident.

When no fumigating means is available, infested nutmeats should immediately be placed in 32 deg. F. storage. Even if held at this temperature, when less than two months have elapsed at removal the insects will shortly become active again. In such cases the material should be used promptly upon removal from storage. Nutmeats that are infested should never be used for topping material.

When nuts develop mold or rancidity they must be discarded, as even baking does not eliminate the flavor. The treatment necessary to remove even a slight amount of either is usually impracticable.

Coconut

CONTAINERS

For macaroon or shredded coconut, use paper-lined wood boxes or paper-lined slack coopered barrels.

For copra no container is used, the material being shipped and stored loose.

SHIPPING

Shredded coconut should always be shipped in clean, dry vehicles. Incoming containers showing signs of moisture or damage should be carefully inspected. Copra is customarily shipped in bulk. It requires no particular protection in transit except dryness.

STORAGE

Shredded coconut in unopened, undamaged containers may be stored in a cool, dry place for considerable

periods. Opened containers, if so stored, should be frequently inspected for infestation and accumulating moisture. They should never be stored near ammonium bicarbonate or in ammonia refrigerators, as ammonia fumes darken coconut. Infestation and moisture damage can be avoided by holding coconut in reasonably dry, 32 deg. F. storage. It should be removed from this temperature only as needed.

Copra, sun or oven dried pieces of coconut meat, is used chiefly for soap oils, and should not be used for human food. Ordinary storage is generally satisfactory, unless the material should threaten to spread infestation to other commodities.

PEST CONTROL

Opened containers of shredded coconut are attacked by various storage insects, mites, and rodents. Fumigation will control these pests, but the use of carbon disulphide and sulphur should be avoided, as these gases may affect flavor. Unopened or covered containers may be treated with fumigant sprays for exterior infestations and as repellants.

Mold—and in extreme cases, bacteria—is the most serious and frequent pest attacking coconut. Except for the highly sweetened forms, molds will develop at a moisture content only slightly higher than that of the usual commercial types. Moldy coconut has a foul, musty odor, is dark in color and is worthless as food. Control of moisture is the most useful method of preventing molding of unsweetened coconut. When highly sweetened, shredded coconut is virtually immune to mold and bacteria attack, as long as the sugar remains evenly distributed on the shreds. There is no cure for contaminated coconut, and it must be destroyed.

Copra infestation is easily controlled by fumigation. As many incoming shipments of copra are infested, they should be treated before being stored near food of any sort.

Coconut should never be exposed to a highly ozonated atmosphere or rancidity will develop.

Sugars

CONTAINERS

For berry sugar and XXXX sugar use paper-lined jute bags.

For cerelose and corn sugar use cotton bags.

For granulated sugar use cotton-lined jute bags.

For fondant use tight coopered barrels.

For candy glazes use tin cans.

SHIPPING

Sugars of all types should be shipped in clean, dry vehicles. The contents of any wet or damaged containers should be promptly examined when received.

STORAGE

Sugars should be stored in a cool place, or at normal temperatures, but always dry. Bag containers should always be stored on skids and should never be in contact with walls. Dryness is the chief problem in sugar storage, as even a humid atmosphere will cause it to form into hard, unworkable lumps.

PEST CONTROL

Insects seldom bother sugars, except as they wander into uncovered containers. They are, however, occasionally infested with mites, which may be brought in with the sugar or may attack it in storage. Injury to sugar by mites is seldom of a serious nature, but these same mites often seriously attack other food materials. For this reason frequent inspections of stored sugars should be made, and when infestation occurs, the previously recommended control methods, by fumigation or spraying with fumigant sprays, should be used.

Chocolate Materials

CONTAINERS

For cocoa beans use heavy jute bags.

For cocoa powder use paper-lined jute bags.

For decorettes and chocolate shreds use paper-lined, slack coopered barrels.

For chocolate coatings and liquors, cakes should be paper-wrapped and placed in burlap bags.

SHIPPING

All chocolate should be shipped in clean, dry vehicles. Any signs of moisture on the bean, or in cocoa powder, should usually be sufficient cause for condemnation, or at least thorough examination.

STORAGE

All chocolates should be stored in a clean, cool, dry place. They should be inspected frequently, for infestation and moisture damage. Both cocoa beans and cocoa powder absorb moisture, therefore should never be stored on or near moist objects, or in humid air. Decorettes and shreds should never be subjected to extreme temperatures, for although flavor may not be altered, the fats flow to the surface where they crystallize, producing a gray "bloom."

PEST CONTROL

Insect pests attacking chocolate include the chocolate moth, indian meal moth and Mediterranean flour moth. These, as well as several storage beetles, will attack these materials if left exposed, or during extended storage. When infested, they should be

When freedom from moisture is important loading platforms should be covered.

fumigated immediately. Either of the two fumigant sprays listed may be used as repellants on chocolates when in containers.

Molds rapidly destroy both cocoa beans and cocoa powders when they become wet. A strong, musty odor develops and the material becomes unfit for use.

Spices

CONTAINERS

For whole spices, bales or jute bags are the usual container choice.

Ground spices should be packed in tin cases or paper-lined boxes.

SHIPPING

Spices may be shipped in clean, dry vehicles at prevailing temperatures. The contents of soiled, moist or broken containers must always be promptly checked when received.

STORAGE

All whole spices may be stored at ordinary temperatures if kept dry. When not in insect-proof containers, they should be examined frequently for infestation. Ground spices should not be stored for over 30 days at normal temperatures, unless packed in tight metal containers, because of the volatile nature of the essential oils. When not so packed, ground spices should be held in cold storage.

PEST CONTROL

All spices, whether ground or whole, are susceptible to the attacks of several insects and mites if in normal storage. Whole spices having little container protection are frequently infested when received. If not then placed in cold storage, these should be fumigated before storing.

Many of the insects encountered in spices are of the drug-store and tobacco types of weevils. As these also attack leather, cereals and other types of seeds, they should be eradicated if possible. Either whole or ground spices may be fumigated with any of the gases except sulphur. Infested ground spices should always be sifted after fumigation, or destroyed.

Mold will develop on either whole or ground spices with the introduction of moisture. This is most noticeable in the ground material, where wet spots will form into sour, musty lumps which generally contaminate the entire container contents. Dryness is the only preventive, and moldy spices should always be destroyed.

Formulas for the fumigants and fumigant sprays referred to will be found on pages 160 and 161 of Food Industries, 6, 4, April, 1934, under No. 9.

Last-minute truck and trailer size and weight restrictions, including the new Rhode Island law that all trucks and tractor-trailer combinations must be able to negotiate, with load, a 4 per cent grade at not less than 20 miles per hour, are given in the above F. W. D. booklet, recently published by the Four Wheel Drive Auto Co., Clintonville, Wis.

Up-to-the-Minute Truck Laws

1934 Second Edition of F.W.D. Booklet Gives Latest Laws on Sizes and Weights

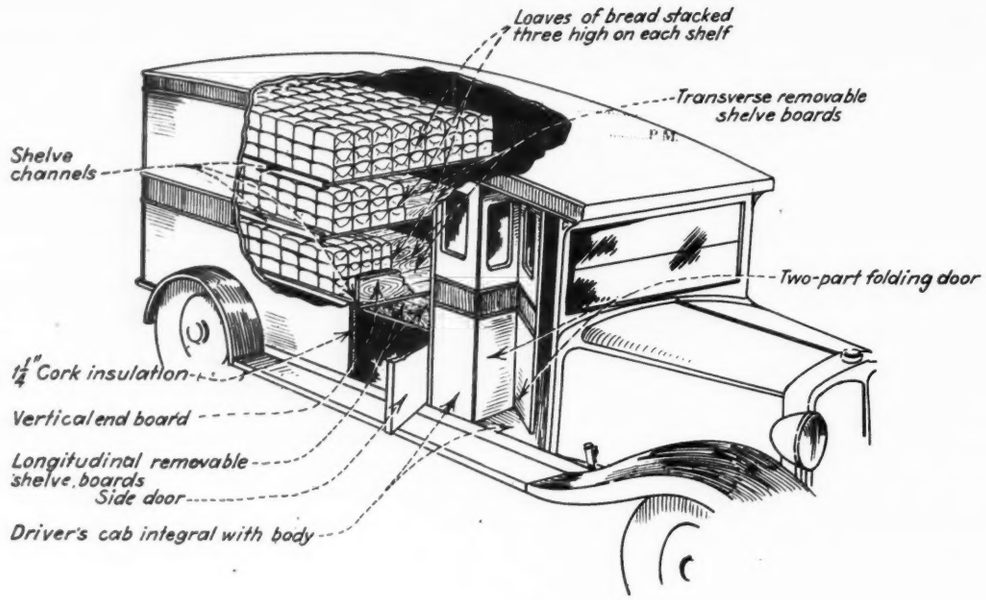
THOSE executives of companies in the food field who must approve budgets for heavy-duty truck equipment to be installed early in 1935 prior to the adjournment in 1935 of state legislatures, which may change existing motor vehicle laws, will find the very latest truck and trailer size and weight restrictions in the 1934 Second Edition of the F.W.D. booklet. The publication, brought out by the Four Wheel Drive Auto Co., Clintonville, Wisc., for the first time early in 1934, has rendered a very desirable service to truck operators in providing a concise résumé of the truck and trailer size and weight restrictions in each state in the Union and in the District of Columbia.

Changes in the second edition as compared with the first include the reduction in length of tractor and semi-trailer and other combinations in the state of New York from 65 ft. to 50 ft. unless registered prior to May 9, 1934 and one of the most revolutionary of all motor vehicle laws enacted in Rhode Island. In that state under the heading of "Engine Performance Ability," the new law states that every motor truck, tractor, or semi-trailer or truck-trailer combination shall be sufficiently powered to insure movement, with load, over a grade of 4 per cent at a speed of at least 20 miles per hour. In other words, all trucks in that state must be able to get out of their own way on hills. If the new Rhode Island performance legislation is copied by other states, trucks of better hill-climbing ability will result.

The F.W.D. booklet, which contains 53 pages, is $4\frac{3}{4}$ by 7 inches, and fits conveniently in one's pocket.

Extreme diligence was exercised to eliminate errors in the F.W.D. compilation of the laws and regulations limiting the size and weight of trucks and trailers by securing the cooperation of responsible officials in each state.

In each case these authorities have checked and approved the interpretation of the laws of their respective states and their signatures appear in facsimile at the bottom of each page. These signatures have proven of great value as citing the authority for compliance by the owner with the various state limitations as to overall size; gross allowable weights and unit axle and tire loadings.



Perspective, cut-away view of the Silvercup Bread body developed by the Gordon Baking Co., Inc., with plants in Chicago, Detroit and Long Island City, N. Y. Note the three removable-board shelves with loaves stacked three-high to prevent crushing. Also note the side door for easy delivery and the two-part folding door of the driver's cab

Body Design Important

in Cost of Bread Delivery

TRUCK body design plays a most important part in the cost of bread delivery to stores, restaurants and other retail outlets. After the selection of the most economical chassis for the work, including first cost, operating expense, and maintenance and repair charges, body design determines the size of the load carried and the facility with which that load is delivered by the salesman-driver.

Body design is also an important factor in building the business of the baking company, since the condition of the bread when it reaches the customers is reflected in the sales volume. The condition of the product upon final delivery is particularly important in the case of bread because of its tendency to absorb odors or fumes of any kind and the necessity to protect it against small particles of dust or dirt.

The proper bread delivery body must therefore provide adequate protection for the product at all times up to the final delivery to the customer and must otherwise be so constructed that the driver has easy access to the load in order to allow a maximum driver work output.

In the baking industry, the two above requirements have been met in several fundamentally different ways. Some companies use trays; others, boxes and still others, removable shelves. Among the concerns using removable shelves is the Gordon Baking Co., Inc. It has developed a standardized design for truck bodies used at its plants in Chicago, Detroit and Long Island City, N. Y.

THE Gordon body, which is shown in the accompanying illustrations, has a capacity of approximately 1,000 loaves of bread and is mounted on one of several makes of typical ¾- to 1-ton, straight-frame truck chassis. The driver's compartment or cab is built integral with the body although there is no opening in the forward partition dividing the body proper from the driver's cab.

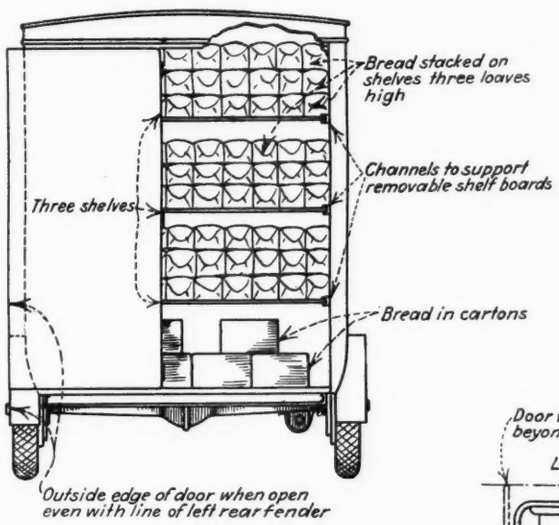
The body is fully insulated all around with cork 1¼ in. thick in the sides, front and rear ends, roof and doors. In the earlier bodies the inside lining was made of white pine but in later bodies this has been replaced by presswood, $\frac{3}{16}$ in. thick, which is lighter and smoother, with less hazard of wood slivers.

The floor of the body is covered with 14-gage sheet steel to provide good wearing qualities and reinforcement where the load is actually carried. This steel is turned up around the edges inside the lining to provide a dust and air proof joint with the side and end walls of the body. Outside end, side and door panels are made of aluminum, sheet steel or galvaneal. With the interior construction previously described, this provides a fully-insulated, dust-proof body.

The insulation helps to maintain the freshness of the bread, which is wrapped in waxed paper and loaded into the body warm at a temperature of approximately 75 deg. F. This temperature changes slowly, depending upon the temperature of the out-

side air and the frequency of the openings of the body doors. The insulation also prevents the bread from freezing in extremely cold weather.

With no opening between the driver's cab and the body proper, the construction of the body as outlined prevents the entrance of dust, dirt or fumes. Accordingly,. no change is made in the location of the truck engine muffler or end of the exhaust pipe which terminates under the body forward of the rear axle.


Bread stacked on shelves three loaves high
Channels to support removable shelf boards
Three shelves
Bread in cartons
Outside edge of door when open even with line of left rear fender

Rear, cut-away view of the Gordon Silvercup body showing the three shelves and the method of stacking the loaves three-high to prevent crushing. Bread in cartons is carried on the body floor. Note how the rear door when open does not extend beyond the line of the left rear fender

In interior design, the body is equipped with three horizontal removable shelves made of boards about $\frac{7}{8}$ in. thick and 8 in. wide. These are inserted in metal channels, run horizontally along the body sides and front end. The bread is loaded on these shelves, three loaves high to prevent crushing. No bread is loaded on the floor, this space being reserved for cartons or boxes of bread.

The salesman has access to the body through two doors, one at the rear and the other on the right side at the front near the cab. The latter permits side unloading from the sidewalk for convenience and safety of the salesman-driver.

The rear door is offset to the right in regard to the transverse centerline of the body. This reduces the number of the salesman's steps to the sidewalk when standing in the street and unloading from the rear.

When the rear door is fully opened and swung back against the rear of the body, its offset position makes its outer vertical edge come even with line of the left rear fender of the truck. If the door extended out beyond the line of the fender, it would constitute an accident hazard by reason of the likelihood of its being struck by other vehicles passing too closely.

The removable boards forming the three body shelves are placed transversely of the body from the rear to the rear vertical edge of the side door. At this point on each shelf, a removable board is inserted vertically to prevent the bread from shifting forward when the vehicle comes to a stop.

On each shelf, the board between the rear edge of the side door and the front of the body are run longitudinally of the body. They are supported at the rear on a metal ledge on the foremost transverse board and at the front on a channel placed horizontally on the inside front end of the body.

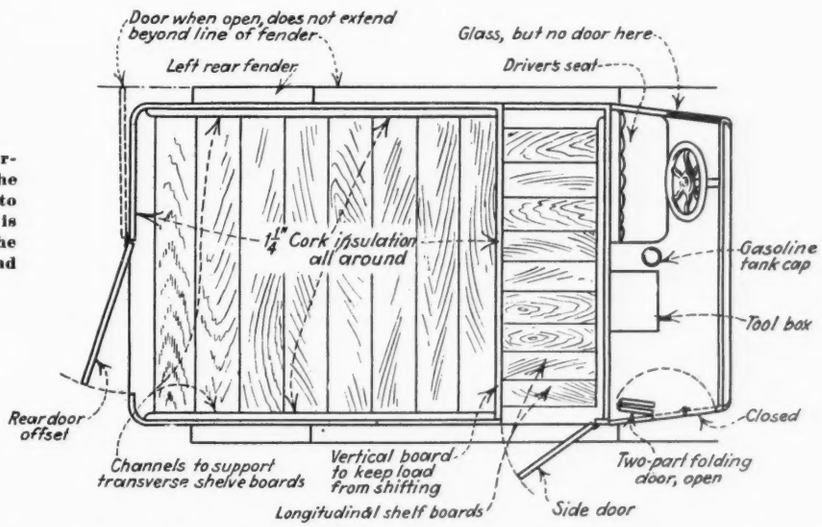
IN operation, the driver may unload first from either the side or the rear, but in whichever case, he removes the shelf boards when the bread on them has been taken out. The removed boards are placed on the floor of the body.

The above method of removing the shelf boards progressively as the load is taken out, permits the driver to reach easily the loaves of bread at any stage of the unloading operation and thus helps to increase his work output within the limits of his working hours.

The Gordon bread, which is known by the trade name Silvercup, is made in three sizes, weighing respectively 14, 16 and 20 oz. Thus with the body described and carrying approximately 1,000 loaves, the maximum load carried is never more than 1,400 lb.

The body is also characterized by two other features of design, one for the salesman's safety and the other for his convenience and comfort. The feature of safety design is the closing-in of the left-hand side of the driver's compartment. In the place usually occupied by a door, a permanent panel with drop window and sash is provided, thus making it impossible for the driver to get out of his cab to the street on the left side.

On the right side of the salesman's cab, a two-part folding door is provided in place of a swinging or rolling door. This type of door has a low maintenance cost, is easy to open and close and when closed affords the salesman ample protection against the elements.


Door when open, does not extend beyond line of fender
Glass, but no door here
Left rear fender
Driver's seat
1¼" Cork insulation all around
Gasoline tank cap
Tool box
Rear door offset
Closed
Channels to support transverse shelve boards
Vertical board to keep load from shifting
Two-part folding door, open
Longitudinal shelf boards
Side door

Plan view of the Gordon Silvercup Bread body showing the arrangement of the removable boards making up the shelves on which the bread is carried. Also the 1¼-in. cork insulation all around and the layout of the driver's compartment integral with the body proper

Practical Problems of

TRUCK TRANSPORTATION

DISCUSSED BY EXECUTIVES IN THE FOOD INDUSTRIES

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The Peak-Period Driver Problem

Question No. 6

What is the best method of solving the peak-period driver problem?

1. What is the best method of solving the low and high-peak truck driver problem of companies in the food field which have recurring seasonal business requiring a large number of trucks in one or more periods of the year and a much smaller number in others?

2. Does it pay to lay off drivers after the high peaks are over and hire other drivers when these peaks recur? When this is done, is the driver service satisfactory and does not accident frequency increase?

3. Can the drivers not necessary in the low-peak seasons be profitably employed in other branches of the business until the high peaks recur?

4. Would it be practical to enter into arrangements with other concerns outside the food field, having high peaks when your low peaks occur, to interchange drivers, in this way giving the drivers a full working year, and at the same time retaining practically the same driver force from year to year?

Produce Business Fairly Constant

EXTREME peak truck driver labor troubles have not developed in the Produce Division of The Borden Sales Co., Inc. Our company sells and delivers to local customers a somewhat diversified line consisting of all grades of butter; shell eggs and frozen eggs; poultry and geese, ducks and turkeys in season; and various kinds of cheese, hams and bacons.

While it is true that we have busy seasons, for example in shell eggs prior to Easter, and in turkeys and poultry prior to Thanksgiving, Christmas and New Year's, these peaks in comparison with total business throughout the remainder of the year are not as extreme as we understand occur in the ice cream, beer and soft drinks businesses.

Our truck policy may be briefly stated as follows: We aim to make all deliveries with our own trucks and our own drivers because of the excellence and low cost of the service thus obtained. With all trucks working in the busy peaks, the surplus of units in the low peaks is withdrawn from service for mechanical repairs and repainting under a maintenance plan which seeks always to keep the trucks in good mechanical condition and appearance.

When the trucks are out of service for major repairs or repainting, the drivers take their vacations. We employ one or more helpers with licenses at each branch. These helpers are used as drivers and paid drivers' wages in the busy peaks, or when regular drivers are absent due to sickness. Under the above policy we maintain practically a constant force of truck drivers.—Jos. HUSSON, *Automotive Superintendent, Borden Sales Co., Inc., Produce Division, New York City.*

Several Ways to Keep Drivers

QUESTION No. 1 is extremely difficult to answer, for the simple reason that in the ice cream industry in the metropolitan New York area, there will always be a low and high-peak route salesman problem. As the answer to this question is somewhat given in replying to the other questions, I will next take up question No. 2.

It is absolutely essential to lay off a certain number of route salesmen after the peak of the summer season. In our own particular business a number of route salesmen apply for positions in the late spring and expect to be laid off in the fall. These men then secure positions with firms having their peak during the winter time. We attempt as much as possible to retain as many good route salesmen during the winter time as is consistent with good management. These men in some cases are made helpers on regular winter routes. In other cases they are reduced to special delivery drivers. In other words, we attempt to keep as many route salesmen during the winter period as possible in order that when business picks up, these men can again be given their old routes. The floating help is limited as much as possible to helpers and special delivery drivers.

It is not feasible to employ route salesmen in other branches of the business as all departments are reduced in personnel during the winter period.

I believe I have more or less answered question 4 but will further add that wherever possible, we attempt to place good men whom it is necessary to lay off in the fall with companies having their business at that time such as coal companies, department store delivery service and fuel oil companies.

Before anyone is permitted to drive any of our equipment, he must first pass a test as to his driving ability given by competent individuals.

One other method of reducing the number of individuals to be laid off in the fall months is by staggering employment. This method we have followed out for some time and found it to be quite satisfactory—E. B. LEWIS, JR., *vice-president, Pioneer Ice Cream Brands, Inc., New York City.*

Next Month's Question

QUESTION NO. 7

Is waxing or polishing the best method of preserving the finish on truck bodies?

1. On what types of bodies used on trucks in the food field is it preferable to use wax instead of washing and polishing in the usual manner?

2. Does the waxing preserve the finish so that repainting may be done less often?

3. When repainting has to be done, how is the wax remaining on the body removed?

4. How often must rewaxing be done?

5. For the maintenance of a given character or degree of finish, does it cost more to wax and rewax than to wash with soap and water and polish with chamois?

Keeping Same Drivers Important

WITH an experience of many years in business practice, the writer finds it very necessary to employ drivers twelve months in the year. During the dull season, about three months in the year, we try to give the drivers at least three weeks out of every four and that practice works out very satisfactorily all around. We lay the men off in rotation. They expect this, and by so doing we have their wholehearted interest year in and year out.

In the opinion of the writer, it is not a safe venture for one who has a large sum of money invested in trucks to jump around over the furrows in hiring and firing drivers. We have been very fortunate here. Our accidents have been

very few and far between. As a matter of fact, the companies with whom we place our insurance business have mentioned the fact frequently that our account is very much appreciated because we rarely call on them because of accidents.

I have an experience back of me of over 40 years, and I feel that a going concern that works in a haphazard way with the drivers of its trucks is not treating itself squarely or the men working for the concern. My object in replying to your letter is in the interest of businessmen with whom you come in contact, who have to use trucks, that they may take a page out of my book in accordance with the above lines.—BENJAMIN LEVIN, *general manager and treasurer, Berry Spring Mineral Water Co., Ltd., Pawtucket, R. I.*

Keep Drivers By Split Routes

IN THE slack season, we use one truck on two routes. One driver starts early and finishes his route at noon. The second driver runs the second route in the afternoon.

We attempt to retain our entire driver force by employing the best of our men on shorter hours. However, in some cases, changing drivers is beneficial.

As a general rule, salesmen cannot be profitably employed in other branches of the business. We have had no experience in getting our drivers positions with other concerns in town which have busy seasons when our business is slack. —C. A. READ, *Spring Grove Ice Cream Co., Spring Grove, Pa.*

Light Routes Biggest Problem

FOR the first three questions, we have been fortunate enough to keep away from any extreme peaks in business volume so far; our tonnage handled ranging within a 10 per cent limit of the average.

Question four would be the greatest problem to work out, as we find that deliveries in some territories are excessively high, due to lack of sufficient tonnage, but find it necessary to make these deliveries regardless, on account of past and future business. To our mind a comprehensive delivery system in territories covered by two or more industries in the food field would greatly reduce the cost to all concerned.—E. E. PETERS, JR., *Peters Packing Co., Inc., McKeesport, Pa.*

Finds Other Work for Drivers

WE cover the State of Connecticut, and have not been able to solve the low and high-peak trucking problem in that area as yet.

However, we do not find it necessary to lay off drivers; but are under the impression that it would be unsatisfactory to do so, as our men are trained to collect money and have responsibilities that we could not entrust to someone unfamiliar with our customers. We also find that our drivers and helpers can be used advantageously in other branches of our business whenever necessary.

We do not think that an arrangement for the transfer of drivers between companies would work, neither do we think it practical.

In reference to part 4 of the question, practically all of our merchandise is sold on a cash basis, and in many instances the storekeepers dislike to pay cash. Therefore our drivers must be trained to meet conditions as they arise, with discretion. Under no circumstances do we take a chance in having a man not properly trained, who cannot understand and complete the transaction.—JOHN J. MULLIGAN, *Diamond Bottling Corp., Waterbury, Conn.*

Union Extras Used by Brewery

WE meet our problem of peak deliveries, which come between March and November, in two ways. We work our drivers overtime as much as two or three hours a day during the five eight-hour days they are permitted to work. We also employ "extras" to operate the trucks during the sixth day when the regular drivers are off. This is done through our agreement with the union and these men are issued temporary cards, known as "permit cards" by the union. Overtime, of course, costs time and a half. Also, we hire outside trucks, paying for these according to the amount of beer that they deliver. It is more economical to operate only as many company trucks as can be kept reasonably busy throughout the year except for a brief lay-up when they are reconditioned.

Breweries have, for many years, been "closed shops," and all our drivers are union men. When the end of the peak season is reached, the "permit card" men are discharged, and the union attempts to place them in other industries. In the spring, as the busy season approaches, we notify the union how many drivers we need and they are sent to us. The union, of course, sends back as many of the drivers who have previously worked for us as are available. When these additional drivers are taken on, no abnormal increase in the frequency of accidents is noted.

It is impossible for us to employ drivers in other branches of the business during the off season for two reasons. In the first place, we employ union men inside the plant and could not, therefore, use drivers for that work. Also, the off season for truck operation is the off season for plant operation.—JACOB RUPPERT, *president, Jacob Ruppert Brewery, New York, N. Y.*

Training Drivers Main Problem

OUR business is a door-to-door retail sales organization to the extent of approximately 80-85 per cent. The remainder is wholesale to stores. This business is not a seasonal business but runs practically uniform throughout the year. There are various plants which have a falling off due to summer business, while others increase in the summer, such as routes that run along the beaches, where the resorts do business. An occasional route may be added and in some seasons of the year an occasional route may be removed, but this is so insignificant it makes little difference in our operating costs.

Most of our operators are driver salesmen who work on commission. We do have some difficulty in breaking in new operators when they are hired and have some difficulty in maintaining a rigid enforcement of our rules of operation among some of our older men. Nevertheless, these are problems which have to be taken care of as they arise.—D. R. BOYER, *Superintendent of motor vehicles, Hathaway Bakeries, Inc., Cambridge, Mass.*

Part of the fleet of delivery trucks operated by Jacob Ruppert Brewery in New York City, and on which the peak-driver problem is solved by working the drivers overtime during the five eight-hour days in which the union permits them to work and hiring extra union drivers on "permit cards" on the sixth day of the week.

BUSINESS TRENDS

Fats and Oils Imports

Domestic production of edible fats and oils comes largely from livestock and cottonseed. Conditions affecting agriculture, political and otherwise, are tending to restrict the supply from both these sources. As would be expected, importations of edible oils and oil seeds is increasing.

Reports from Los Angeles estimate 50,000 tons of sesame seed to come to Los Angeles and San Francisco from China before April 1. Edible varieties of kapok seed, from Java and Japan, never before imported in quantity, are beginning to arrive. Copra is being brought in in increased quantities, and kaoliang, never before imported, is scheduled to come in large tonnage.

Canned Fruit Carryover

PEARS were the only important California canned fruit to show a greater carryover in January this year than last, with 1,116,931 standard cases unsold compared to 565,016 in 1934. Stocks of other fruits showed marked declines, with cling peaches at 2,314,785 standard cases against 3,741,428; apricots at 374,639 against 511,230; and cherries 49,435 compared to 136,982.

Meat Consumption Forecast

FORCED SLAUGHTER and lack of feed have seriously curtailed the number of livestock in the country. As a consequence, the past several months have seen many forecasts of actual meat shortage for 1935, accompanied by rapidly increasing prices.

As time has passed, and the packing industry has canvassed the situation more thoroughly, opinion has veered to the conclusion that there may be some scarcity, but no actual shortage; and that the sharpest part of the prospective price rise has already been realized. Packingtown estimates for inspected slaughter in 1935, reported by *Chicago Journal of Commerce* are:

Expected Slaughter

Per Cent of 1934	Per Cent of 5-Yr. Average	Per Cent of 1926	Per Cent of 1930
	Hogs		
69.8	67.1	76.3	70
	Cattle		
86.3	104.1	111.4	111.8
	Calves		
84.5	108.3	111.3	111.4
	Sheep		
91	87.9	84.7	122.5

On the basis of these slaughter estimates, the forecast for per capita meat consumption in pounds is as follows:

	1935	Five-year Average 1933-1929
Beef	52	50
Pork	50	71
Veal	7.5	7
Lamb	6	7
Total	115.5	135

It is evident that if these estimates prove correct, real shortage will be felt only in pork, and there will be slightly more beef available.

Butter Above Import Level

WITH production falling off, and likely to continue to do so because of high feed prices, and with stocks in storage only normal, sharp advances in butter prices have been realized. However, this did not happen until recently and butter held within a narrow range, except during the last two weeks of January when stormy weather decreased deliveries and caused a rapid rise.

The cause of this fairly steady price, in spite of short supply, is found in the world price level. During December, for instance, finest quality New Zealand butter was quoted in London at 15.7 cents. Duty entering this country is 14 cents, so one does not have far to look to determine why the New York price averaged around 31 cents in December.

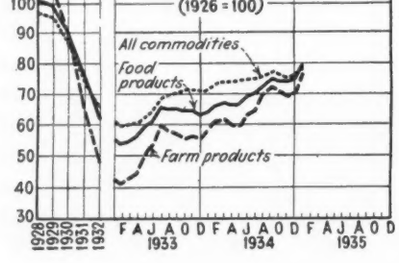
That this world price situation controls the domestic price is evident from the rapidity with which butter imports start when the price is favorable. For instance, in the last half of January, when New York prices went to more than 35 cents, foreign butter began immediately to come in, and a single shipment of 10,000 cases was made from Wellington, N. Z., to New York on the 19th.

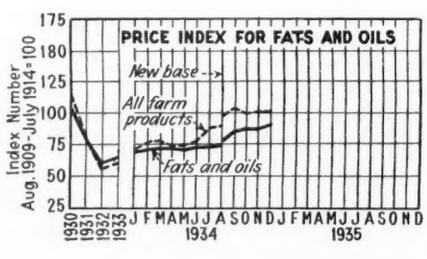
Candy Sales Increase

IF A MORE active national sweet tooth is any indication, business is on the way toward recovery. November, 1934, according to the most recent report of the Department of Commerce, showed sales of confectionery and competitive chocolate products at $22,262,137, up 11.8 per cent over November, 1933. And the record for the first eleven months of 1934 exceeded that of the same 1933 period by 14.8 per cent, reaching a total of $182,000,000. New England led the rise, showing a November increase of 19.4 per cent, with the South a close second at 17.8 per cent.

Fish Supply Improves

FISH are where you find them and also when. Apparently more are being found this season than last. The Bureau of Fisheries reports a 15 per cent rise in the landings at New England ports for the first eleven months of 1934, compared to the same period of 1933. From California and other sec-


WHOLESALE PRICES
(1926 = 100)
All commodities
Food products
Farm products
1928 1929 1930 1931 1932
F A J A O D F A J A O D F A J A O D
1933 1934 1935


PRICE INDEX FOR FATS AND OILS
Index Number Aug. 1909-July 1914 = 100
New base
All farm products
Fats and oils
1930 1931 1932 1933
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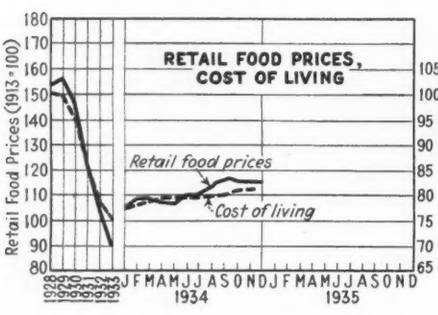
1934 1935


RETAIL FOOD PRICES, COST OF LIVING
Retail Food Prices (1913 = 100)
Cost of Living (1923 = 100)
Retail food prices
Cost of living
1928 1929 1930 1931 1932 1933
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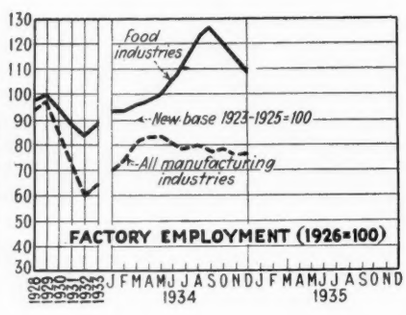
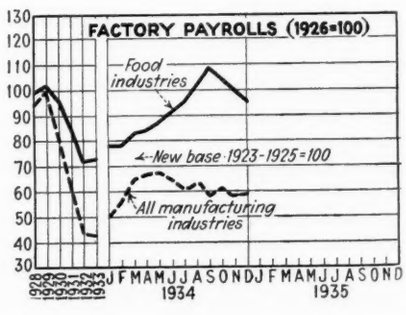
1934 1935


Food industries
New base 1923-1925 = 100
All manufacturing industries
FACTORY EMPLOYMENT (1926 = 100)
1928 1929 1930 1931 1932 1933
J F M A M J J A S O N D J F M A M J J A S O N D
1934 1935


FACTORY PAYROLLS (1926 = 100)
Food industries
New base 1923-1925 = 100
All manufacturing industries
1928 1929 1930 1931 1932 1933
J F M A M J J A S O N D J F M A M J J A S O N D
1934 1935

Business Uneasy

WITH CONGRESS jockeying to determine how far to Left it dare go, the President requesting debatable social legislation and asking for more than four billions of dollars for relief work, and the Supreme Court studying the validity of the gold clause in financial contracts, business in wondering what is coming next and how to meet it.

IN THE MEANTIME general business activity continues at a lively rate with the steel and the automobile industries taking the lead. And, although daily prices fluctuate considerably, wholesale and retail prices continue upward, grains excepted.

THE *Business Week* index of general business climbed to 65.1 per cent of normal during the week ending Jan. 26; an advance of 5.17 per cent since Dec. 22.

WHOLESALE PRICES reported by U. S. Department of Labor rose generally 2.35 per cent for the four weeks ending Jan. 19; farm products shot up 7.72 per cent and food jumped 5.81 per cent.

NEW YORK *Journal of Commerce*, in its weighted price index, is more conservative with an advance of 1.41 per cent for all commodities and a decrease of 3.30 per cent for grain. Food prices spurted 7.98 per cent during the month ending Jan. 25.

RECENT STORMS and freezing weather throughout the country especially in the southern states will probably cause further marked increases in food prices.

tions come similar reports, Monterey, for instance, reporting a record catch of 238,369 tons of sardines, exceeding the best previous by 69,000 tons.

Along with these reports of landings come reports of increased packs of canned fish. Shrimp pack is 145,000 cases, or 22½ per cent over 1933. California mackerel pack at 1,250,000 cases surpasses any past year by 50 per cent. Tuna also had a record year. The sardine pack in California reached 600,000 cases. At the same time holdings of frozen fish stand at almost 74,000,000 lb., 30 per cent over 1933 and 7 per cent above the five-year average.

Evidently Father Neptune has taken a hand in the food supply, making the fish catch ample, thereby compensating somewhat for the prospective curtailment of meat supply.

Grain Stocks Small

FARM holdings of grain in the United States are the smallest on record, according to a January report of U. S. Department of Agriculture. Corn on farms, Jan. 1, totaled 814,017,000 bu., 73.5 per cent of the 1934 crop, compared to 1,433,740,000 bu. a year ago. Wheat stocks were reported as 136,044,000 bu., 27.4 per cent of last year's yield, against 196,508,000 bu. on Jan. 1, 1934. Oats on farms were 346,248,000 bu., 65.5 per cent of the 1934 crop, while a year ago the stock was 456,283,000 bu.

Cold Storage Holdings High

MAIN classifications of cold storage holdings are in general above the five-year average, according to a report released in mid-January by the Bureau of Agricultural Economics. Total meat in storage was 961,000,000 lb., more than 140,000,000 lb. above 1934 and 250,000,000 lb. over the 1930-34 average. Poultry held was 20 per cent above 1934, and 9 per cent over the average, at 132,000,000 lb. over the 1930-34 average. Poultry cheese slightly higher, butter considerably lower, and fruit somewhat lower. Cured and frozen fish holdings are higher.

INDICATORS

FLOUR production, according to current reports of General Mills, Inc., is at normal levels, with the 1934 total somewhat above 1933.

BRITISH food consumption, in spite of depression, is higher, Lord de la Warr recently told the International Institute of Agricultural, 40 per cent more butter, 31 per cent more eggs and 25 per cent more fruit being used than four years ago.

RYE production in 1934, in 26 producing countries, was 873 million bushels, compared to production of 1,028 million bushels in the same countries in 1933.

WORLD COFFEE STOCK continues to decline, as figures of the New York Coffee & Sugar Exchange show a drop of 948,411 bags in 1934 to a total stock on Jan. 1 of 6,641,867, of which 1,234,867 bags were in the United States.

MEAT CONSUMPTION established an all-time record for poundage in 1934, with a total of more than 20 billion. Per capita consumption, at 162 lb., was 6 lb. below the record.

BRANDED FOOD PRODUCTS recorded an advance in sales averaging 10 per cent in 1934, according to the Association of Manufacturers' Representatives.

PUERTO RICAN MOLASSES for bossy is the latest thing in emergency livestock feeds, as AAA closes a deal for 50,000,000 gal. to be processed from the island's surplus cane.

GREEN LIMA BEAN pack for 1934 totaled 1,162,536 standard cases.

GREEN AND WAX BEAN pack for 1934 totaled 5,157,128 standard cases of green beans and 1,143,234 standard cases of wax beans.

BEER, WINE AND LIQUOR consumed by the joyful citizenry during the first year of repeal were valued at $3,000,000,000, with prospects for an even merrier second year.

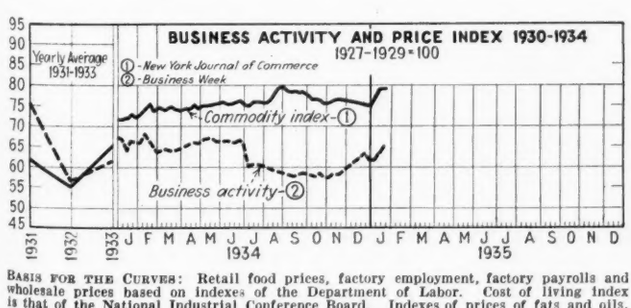
IF CAPITAL GOODS activity has any bearing on the food field, the recent decline of 14 per cent in the value of building operations holds little promise.

COCONUT, dessicated and sweetened, still has a price advantage over peanuts and should continue to improve its position as a candy filler.

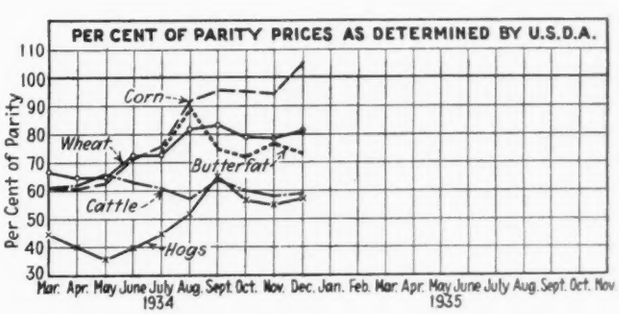
CARLOADINGS in the first three months of the current year will be about the same as in the corresponding period of 1934, according to the Regional Shippers' Advisory Boards.

Construction News

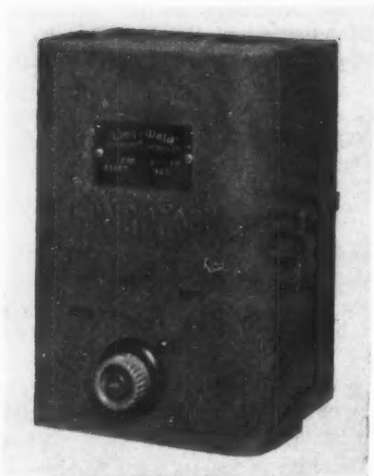
	Pending (thousands)	Awarded January (thousands)	Total Awarded 1935 (thousands)
Bakery	$57	$57	$57
Beverages	683	326	326
Canning and Preserving	582	56	56
Confectionery	.....	.....	.....
Grain Mill Products	203	128	128
Ice, Manufactured	.....	78	78
Meats and Meat Products	424	250	250
Milk Products	131	258	258
Sugar	.....	.....	.....
Miscellaneous	1,189	87	87
Total	$3,269	$1,240	$1,240



BASIS FOR THE CURVES: Retail food prices, factory employment, factory payrolls and wholesale prices based on indexes of the Department of Labor. Cost of living index is that of the National Industrial Conference Board. Indexes of prices of fats and oils, and of all farm prices are from the U. S. Department of Agriculture, as are the per cent of parity prices.



NEW EQUIPMENT
for Food Manufacturers



Automatic motor starter.

Chain-type flexible coupling.

Automatic Motor Starter

PREVENTION of accidental starting and avoidance of burning out motors are advantages claimed for a motor starter developed by Lincoln Electric Co., Cleveland, Ohio. The starter is of the across-the-line type. With it the starting current cannot be closed unintentionally, because the red stop button extends around and beyond the green start button, so that accidental hitting of the buttons only moves the stop button. The only way in which the start button can be pressed, in its recess, is with the finger tip or some similar instrument.

This starter has inverse-time-limit protection which allows carrying a small overload a long time or a large overload a short time. Immediate motor starting upon resumption of current is insured by low voltage release with two wire control. This starter comes in three types for different horsepowers and 110, 220, 440, and 550 volts. Horsepower range is from 3 to 30. Wiring of more than one control station can be used with the starter. The overload can be reset on the outside of the case, permitting it to be locked to prevent tampering.

Flexible Coupling

A CHAIN-TYPE flexible coupling that is said to give easy operation and great flexibility, without friction or noise, has been developed and patented by Baldwin-Duckworth Chain Corp., Springfield, Mass. One strand of the chain is equipped with the standard cylindrical rollers whereas the other strand has convex-surface, oversize rollers. This construction is responsible for the easy operation where shaft deflection or misalignment exist. Permanent shaft deflections up to 3 deg. are said to be provided for by the construction used, being handled without undue strain. Although not evident in the accompanying photograph, the chain is fitted over two sprockets, one fastened to the end of each of the two shafts to be coupled.

Truck with 12-cylinder "Pancake" engine.

Eight Speed Gear Motor

EIGHT speeds are provided by a combination of a four speed motor and a two speed gear, in a new development made by Century Electric Co., St. Louis, Mo. Two, four and six speed gear motors are also available. Motors are wound for single, two or three phase current. Gears are helical. Anti-friction bearings are used. Speeds are changed by a lever mounted at the top of the gear housing. A resilient coupling connects motor and gear.

Underslung Power Truck

NEW HEAVY-DUTY trucks by White Motor Company, Cleveland, Ohio, feature a 12-cylinder, horizontally opposed engine of "pancake" design. This flat engine is placed under the floor of the truck, and the cab is moved foward to the extreme front end of the truck. Advantages claimed for the new design are better weight distribution, lower center of gravity, and greater payload space for every wheelbase. This design is available in 24,000 to 30,000 gross weight trucks and tractor-trailer units, with six wheels for heavier loads. Wheelbase range is from 108 to 180 inches.

Conveyor Belting

FOR handling hot materials, a new type of conveyor belting has been developed by B. F. Goodrich Co., Akron, Ohio, which is called the "Golden Ply." It is claimed by the manufacturers that the new belt construction increases the flexing life by 85 per cent over the regular grades of hot material belting, and that the belt cover is so constructed as to offer far greater resistance to abrasion even after prolonged exposure to heat. Tests of this belting are said

to show that, whereas the flexing life of usual hot material belting always has been reduced about 15 per cent by normal aging test of 14 days at 158 deg. F., the new material actually shows a 31 per cent increase in flexing life after aging.

Steel Work Table

ALL-STEEL factory tables of new design have recently been introduced by Angle Steel Stool Co., Plainwell, Mich. These tables, designated No. 680, are fabricated entirely of No. 16 gage steel. Size is 42x26 in. top, 30 in. high. Finish is olive green. Rigidity is imparted by underneath bracing. Drawer or bottom shelf is furnished, if desired. Maker claims unusual serviceability combined with low price.

Ton-and-a-Half Speed Truck

A HEAVY-DUTY, high-speed, 1½-ton truck in the low-priced field has been introduced by Four Wheel Drive Auto Co., Clintonville, Wis. This truck has an 84-hp. engine, driving to all four wheels. The road speed is 47 m.p.h., at full load. Tires are 6.50x20, dual in the rear. Chassis weighs 5220 lb., including cab. Gross weight is 11,200 lb. Wheelbases supplied are 121, 132 and 142 in. Heavy construction permits use in exacting service. Various body types are available to meet the user's needs.

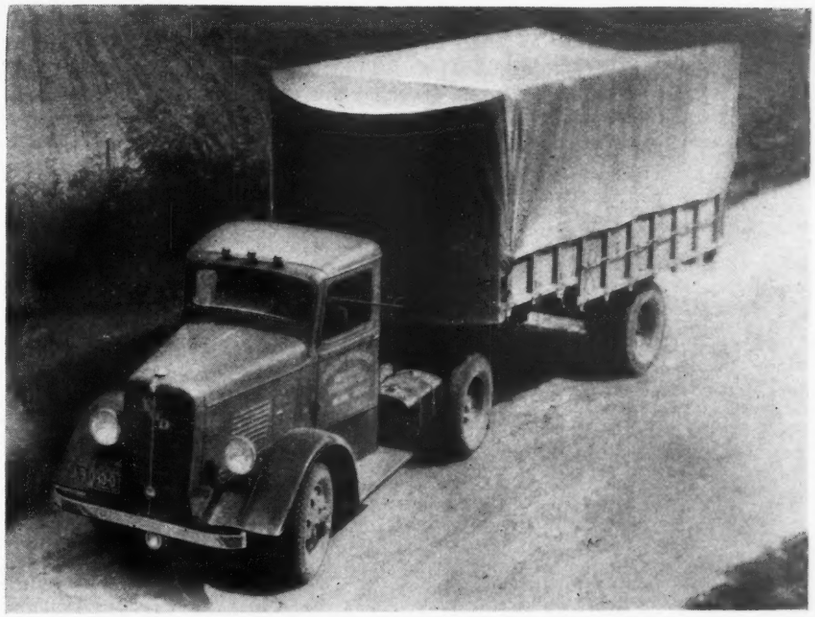
Friction Tape and Compound

UNDER the trade name "Gold Seal," Jenkins Bros., 510 Main St., Bridgeport, Conn., is now marketing a complete line of friction tape and sealing compound. These are supplied in 1, 2, 4 and 8 ounce rolls, wrapped in cellophane. The friction tape is said to be "tacky," free from pinholes, non-raveling and of high insulating quality. The splicing compound is a rubber insulating tape that is said to fuse instantly and become one solid mass when used in splicing.

Slicing and Wrapping Machines

NEW EQUIPMENT for the baker announced by the National Bread Wrapping Machine Co., Boston Mass., comprises a slicer and a small-sized wrapping machine. The slicer is said by the manufacturer to be absolutely positive in action. A gravity feed chute to the infeed allows the operator to feed the machine without placing an individual loaf in the conveyor, a drive from the wrapping machine conveying the bread through the knives. In this way, the slicer is synchronized with the wrapper and no compensating device is needed to allow for variations in the dimensions of the loaves.

The wrapping machine, called the "Junior" has a capacity from 1,000 to 2,000 loaves per hour. It has wide range —6 to 18 in. length, 3 to 8 in. in width, and 2½ to 6 in. in height. It is designed for use with every type of bread wrapping material, and can be used with any slicer of modern design.



New Four-Wheel Drive 1½-ton truck.

Prepared Food Mixer

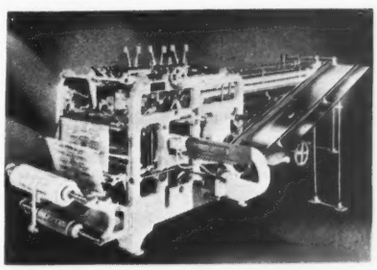
JACKETED for both heating and cooling, a new mixer, by Patterson Foundry & Machine Co., East Liverpool, Ohio, is offered for prepared foods and similar products. This device uses a stirrer driven through a "Unipower" silent, gearless reduction unit and enclosed roller chain, running in oilless bearings to avoid possible oil contamination of food. Stirrer has double arm-blades. One end of blade is fitted with a spring-loaded scraper, while other end is shaped to move materials toward discharge. This mixer is made of plain or stainless steel and is finished in white enamel.

Safety Tire Tread

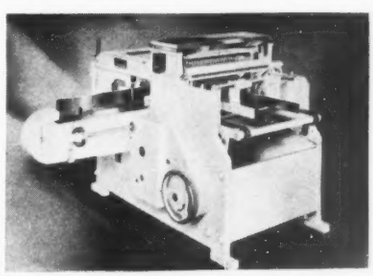
NEW SAFETY and improved performance on muddy, snowy roads is promised by a tire tread recently developed by Firestone Tire & Rubber Co., Akron, Ohio. This tread is supplied with heavy cleats of the "chevron" type so effective on the steel tires of tractors. The manufacturers claim that it prevents stalling or skidding, yet will operate well on good roads at high speeds. It is supplied for both trucks and passenger cars.

Thin Sheet Welder

FOR arc welding thin sheets, plates and shapes, a small motor-generator unit is announced by Lincoln Electric Co., Cleveland, Ohio. It is known as the SA 75, will deliver as low as 20 amp. at the arc without the use of auxiliaries, and can be supplied for use on any al-



Small-size bread wrapper.



Synchronized bread slicer.

Safety tire tread.

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Tank Construction

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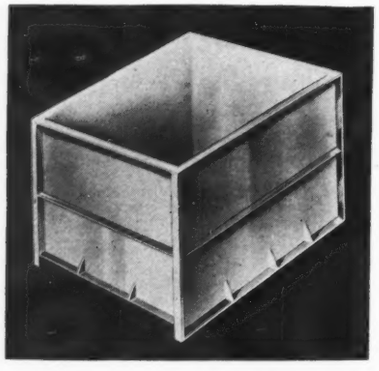

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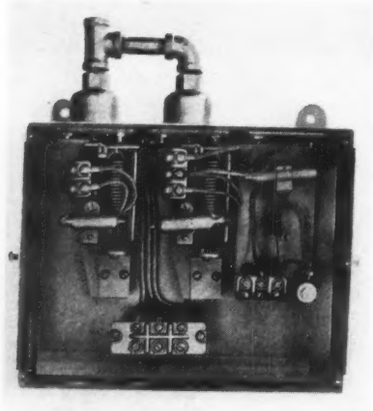

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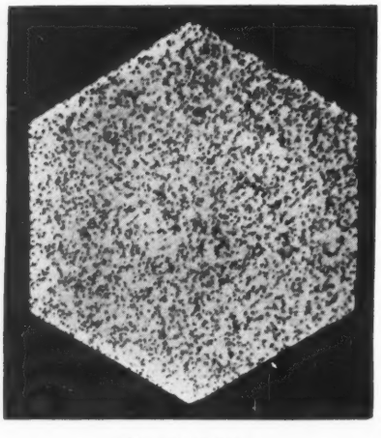

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A LIVING FROM THE LAND. By William B. Duryee, Secretary of Agriculture, State of New Jersey. Published by Whittlesey House, McGraw-Hill Book Co., Inc., 330 West 42nd St., New York, N. Y., 1934. 189 pp., 5¼x7⅝ in.; cloth; illustrated. Price $1.50.

What to do and what not to do if one has to live off the land and doesn't know anything about it.

A HANDBOOK FOR ROUTE SALESMEN. By Fred DeArmond. Published by Route Sales Publications, 330 West 42d St., New York, N. Y. 1934. 106 pp., 7¾x5¼ in. Stiff cardboard. Price, $1.

Author draws on his own experience as a route salesman and as a sales manager to help the route salesman analyze and understand his job to get best returns. Included are suggestions and guidance for self-development.

THE LAW OF PATENTS FOR CHEMISTS. By Joseph Rossman, Editor of Journal of the Patent Office Society. Published by Williams & Wilkins Co., Mt. Royal and Guilford Aves., Baltimore, Md. 1934. 378 pp., 8x5¾ in.; cloth. Price $4.50.

Demand for the first (1932) edition of this book quickly exhausted the supply. Revised and considerably enlarged this second edition contains a special chapter on patent problems relating to foods, use of micro-organisms, metallurgy, and medical preparations.

HANDBOOK OF CHEMISTRY. By Norbert Adolph Lange, Case School of Applied Science. Published by Handbook Publishers, Inc., Sandusky, Ohio. 1934. 1544 + XIV pp., 8x5¼ in.; flexible. Price, $6.

In addition to the usual handbook data this ambitious compilation includes tables giving the composition and use of foods, standardization of milk and cream, ice cream ingredients, milk solids, vitamins, and typical analysis of various public water supplies. In all 162 items are listed in the table of contents. An appendix in two parts gives formulas and theorems from elementary mathematics and tables from higher mathematics.

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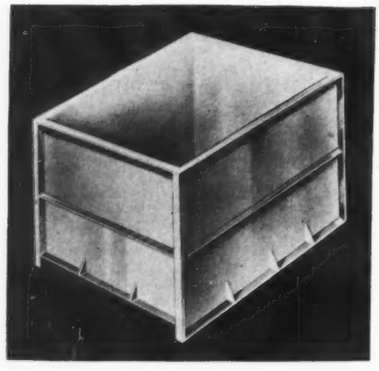

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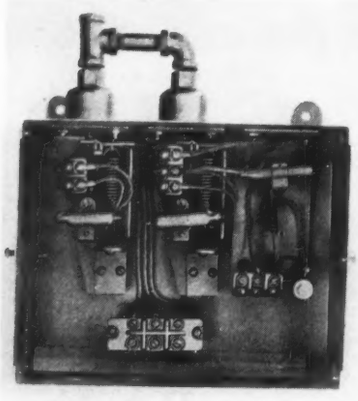

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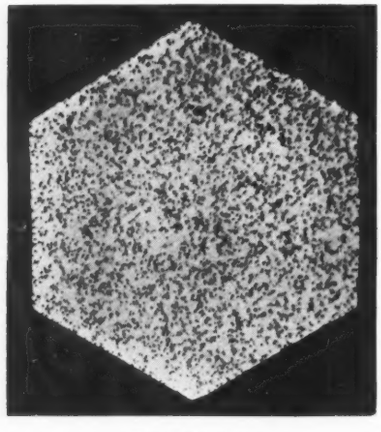

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ANNUAL SURVEY OF AMERICAN CHEMISTRY. Vol. VII. Edited by C. J. West. Published for National Research Council by Chemical Catalog Co., Inc., 330 West 42d St., New York, N. Y., 1934. 403 pp., 8½x5½ in.; cloth. Price $4.50.

Of the 25 topics covered those chapters on Colloids, Biochemistry, Insecticides and Fungicides, and Paint and Varnish are of most interest to food chemists. Exhaustive bibliographies complete each chapter.

A LIVING FROM THE LAND. By William B. Duryee, Secretary of Agriculture, State of New Jersey. Published by Whittlesey House, McGraw-Hill Book Co., Inc., 330 West 42nd St., New York, N. Y., 1934. 189 pp., 5⅛x7⅝ in.; cloth; illustrated. Price $1.50.

What to do and what not to do if one has to live off the land and doesn't know anything about it.

A HANDBOOK FOR ROUTE SALESMEN. By Fred DeArmond. Published by Route Sales Publications, 330 West 42d St., New York, N. Y. 1934. 106 pp., 7¾x5¼ in. Stiff cardboard. Price, $1.

Author draws on his own experience as a route salesman and as a sales manager to help the route salesman analyze and understand his job to get best returns. Included are suggestions and guidance for self-development.

THE LAW OF PATENTS FOR CHEMISTS. By Joseph Rossman, Editor of Journal of the Patent Office Society. Published by Williams & Wilkins Co., Mt. Royal and Guilford Aves., Baltimore, Md. 1934. 378 pp., 8x5¾ in.; cloth. Price $4.50.

Demand for the first (1932) edition of this book quickly exhausted the supply. Revised and considerably enlarged this second edition contains a special chapter on patent problems relating to foods, use of micro-organisms, metallurgy, and medical preparations.

HANDBOOK OF CHEMISTRY. By Norbert Adolph Lange, Case School of Applied Science. Published by Handbook Publishers, Inc., Sandusky, Ohio. 1934. 1544 + XIV pp., 8x5¼ in.; flexible. Price, $6.

In addition to the usual handbook data this ambitious compilation includes tables giving the composition and use of foods, standardization of milk and cream, ice cream ingredients, milk solids, vitamins, and typical analysis of various public water supplies. In all 162 items are listed in the table of contents. An appendix in two parts gives formulas and theorems from elementary mathematics and tables from higher mathematics.

IN THE CURRENT OF EVENTS

- *Canners do big business at record convention*
- *AAA is again after more power over processors*
- *Master, milk codes dormant; important rulings*
- *Asks federal investigation of processing taxes*
- *Experts to discuss all problems of packaging*

Canners' Convention

BY common consent the group of conventions usually referred to as the Canners' Convention, held in Chicago, Jan. 14-19, was regarded as the most successful in years. More equipment was purchased at the show than at the three preceding shows. Attendance was larger than in any previous year. And the volume of transactions in merchandise exceeded anything in history, according to unofficial reports.

Instead of being the orthodox trade association convention, the canners' meeting has developed in recent years into a vast merchandise market. And the canners all seem to like it for they continue to return to the Stevens Hotel year after year in increasing numbers. It is impossible to get an accurate count of the attendance at the eleven or twelve conventions. Estimates run as high as 15,000, but 10,000 is probably more nearly correct.

This gathering comes closer to being a food industries convention than that of A.G.M.A. In addition to the canners, the following groups held annual meetings: brokers, wholesale grocers, machinery and supply manufacturers, preservers, milk evaporators, picklers, mayonnaise manufacturers and chain store operators. Also there were regional and special meetings of other groups.

Officers elected by National Canners' Association for the ensuing year were: president, Howard A. Orr, president of the Winorr Canning Co., Circleville, Ohio; vice-presidents, W. A. Miskimen, Stokely Bros., Indianapolis, and Leonard E. Wood, California Packing Corp., San Francisco. Frank E. Gorrell was re-elected secretary.

Warning the canners against falling into the error of insuring themselves with an indemnity company against damage claims, Judge J. Harry Covington, counsel for the association, cited the great increase in the number of automobile accident claims that has grown up parrallel to the advent of compulsory automobile indemnity insurance. The knowledge that an indemnity company will make good will lead to a tremendous increase in the number of fraudulent claims, of which the canners have had plenty.

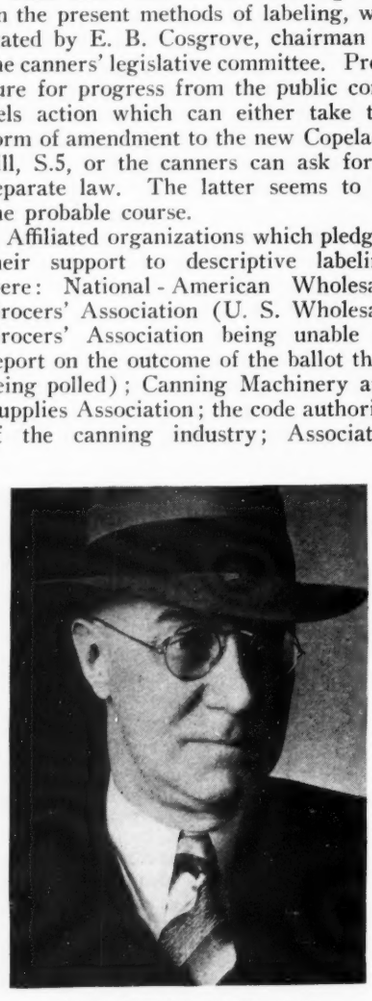
That there can be no standing still on the present methods of labeling, was stated by E. B. Cosgrove, chairman of the canners' legislative committee. Pressure for progress from the public compels action which can either take the form of amendment to the new Copeland bill, S.5, or the canners can ask for a separate law. The latter seems to be the probable course.

Affiliated organizations which pledged their support to descriptive labeling were: National - American Wholesale Grocers' Association (U. S. Wholesale Grocers' Association being unable to report on the outcome of the ballot then being polled); Canning Machinery and Supplies Association; the code authority of the canning industry; Associated Grocery Manufacturers of America; National Association of Retail Grocers of America.

A request from N.A.W.G.A. came to the canners' sectional meetings, asking for increased label allowances and suggesting that the allowances made by members of the Canners' League of California were satisfactory. Canners refused to take any group action on the request, stating that it was a purely individual matter between buyer and seller. At the same time the wholesale grocers complained that the canners were using shipping containers that were too light or of faulty design and resulted in too many dented cans.

Each section chairman was authorized to appoint an industry committee to choose the exact wording to be used in the standardized descriptive terms for the new plan of labeling.

Despite the preponderance of sentiment at the national meeting in favor of descriptive labeling, the Tri-State Canners' Association reported an incomplete poll of its membership showing 60 to 4 in favor of grade labeling using the terms Fancy, Choice and Standard in preference to A, B, C.



CHIEF MEAT INSPECTOR

Dr. A. J. Pistor, who now heads up the meat inspection division of the Bureau of Animal Industry, has a lot to say about the quality of meat shipped in interstate commerce. Formerly assistant to the chief of the meat inspection division, he succeeds Dr. R. P. Steddom, retired. He plans to continue the same general policy of his division.

Four-Point Packaging Confab

EVERY important phase of packaging, packing and shipping will be covered by speakers at the four-day conferences and clinics to be held in conjunction with the Fifth Packaging Exposition in Chicago, March 5-8. The program is divided into four special days. March 5, "progress day," will be alloted to addresses summing up advances made in packaging. The next day designated, "marketing day," will be given over to consideration of well-designed packages. Production, a vitally important element in the packaging picture, will come in for special attention on "production day," March 7. The closing day of the exposition, March 8, will be known as "industries day," and the speakers will dramatize the utilization of modern packaging in the various industries. Other important items to be taken up include "printing" and the "influence of

the consumer." A special conference and clinic on packaging and shipping will be held March 7.

AAA Has Five-Point Plan

As EVERYONE has expected, AAA will try again this year to put over legislation strengthening its position with respect to agriculture and industry. But this time it will handle the Congressmen with kid gloves instead of with the mailed fist that rebounded in defeat last year.

The new plan embodies these five points, three of which directly affect food processors: 1. A land policy program of eliminating sub-marginal land; 2. Creation of an "ever-normal granary"; 3. Broad control powers over non-basic crops, with more stringent licensing power over distributors and processors; 4. Authority to examine books and records of processors and to call on them for reports; 5. Strengthening of the Grain Futures Act and control over other commodity exchanges.

Secretary Wallace apparently has taken a page from the Bible in preparing the "ever-normal granary" program, as it is comparable to Joseph's plan of providing for the "seven lean years." Through loans by Commodity Credit Corp. against grain sealed in bins on the farm, there would be built up stores to be used in times of scarcity. When the stocks get too heavy, they will be used as payment for crop reduction.

In matter of control of non-basic commodities, the AAA will seek power to impose a quota upon buyers where two-thirds of the producers want it. Hand in hand with this, it seeks to make the program compulsory as far as buyers are concerned. But in cases of non-compliance or violation, the licensee could appeal to the Secretary and obtain a court review.

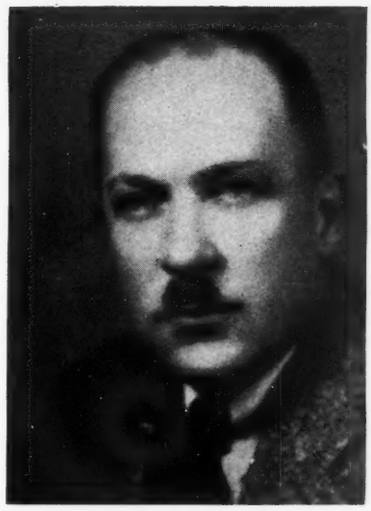
To industry the sore spot in this legislation is the demand that books and records be open to inspection and that processors make regular reports.

As for the Grain Futures Act, the AAA wants teeth in it to further control over speculative marketing, particularly short-selling. And it seeks the same control over other commodity exchanges that the Grain Futures Act gives with regard to wheat.

AAA has abandoned the idea of control over all crops under an adjustment contract, this having been dynamite last year.

Federal Snooping

IT LOOKS much as if food manufacturers are in for a year of federal snooping. Already the dairy industry is being looked into by the F.T.C., and now there is before the House a resolution calling for an investigation of the practical application of processing taxes. It applies to packers, millers and all other food processors—but especially to packers. Representative Otha D. Wearin, who introduced the resolution, expresses its purpose with these statements: "We want to find out if profits of food processing organizations are comparable to those of the people who produce the food. We cannot understand why last year one packer made $25,000,000 while all farmers were losing money."



INVESTIGATOR

Erwin E. Nelson, who comes from the University of Michigan, is now directing the investigation of foods and drugs from the standpoint of pharmacology, toxicology and other medical aspects. He recently was appointed pharmacologist in charge of the drug division of the Food & Drug Administration.

Two Plans for Sewage Control

FEDERAL legislation to eliminate stream pollution—by food processors and others—is being held in abeyance pending a report by National Resources Board. However, two plans for stream pollution control are before Washington. One advocates a central federal agency with power to negotiate agreements with state governments to adopt uniform laws. The other would set up a central federal agency to develop plans in cooperation with state authorities, the federal agency having power to enforce such plans. Federal loans would be provided for industrial plants and municipalities to enable them to meet the requirements. The latter plan is favored, and it likely will be introduced as legislation unless National Resources Board proposes something very similar to it.

Conventions

FEBRUARY

4-5—Potomac States Bakers' Association, annual meeting. Lee L. Robinson, Woodward Bldg., Washington, D. C., secretary.

9—National Malt Products Manufacturers' Association, annual, Sherman Hotel, Chicago, Ill. S. L. Goldman, 160 N. La Salle St., Chicago, secretary.

14—National Cheese Producers' Federation, annual, Plymouth, Wis. R. B. Melvin, Plymouth, secretary.

MARCH

5-8—Fifth Packaging Exposition, Palmer House, Chicago, Ill. Sponsored by American Management Association, 20 Vesey St., New York, N. Y.

11-15—American Society of Bakery Engineers, Edgewater Beach Hotel, Chicago, Ill. Victor E. Marx, 1541 Brickwood Ave., Chicago, secretary.

—Institute of American Poultry Industries, Chicago, Ill. E. B. Heaton, 110 N. Franklin St., Chicago, managing director.

Sugar Quotas Lowered

SURPLUS STOCKS at the end of the year having proved that the 1934 sugar quota was too large, Secretary Wallace has lowered the 1935 quota by 117,000 tons, making it 6,359,261 short tons. Domestic sugar interests had held out for 6,200,000 short tons as the proper allotment. The 1935 quota for off-shore areas is allocated as follows: Cuba, 1,857,022 short tons; Philippines, 991,308; Puerto Rico, 783,959; Hawaii, 894,992; Virgin Islands, 5,341; and full duty countries, 16,639. All these are lower than last year. The quotas for domestic beet sugar and cane sugar, fixed by the Jones-Costigan Act, remain at 1,550,000 and 260,000 short tons, respectively.

Code Activities, Rulings

COMPARATIVE calm cloaked the food-code front in the first month of the new year. Two important codes—the basic food manufacturing pact and the proposed fluid-milk labor code — remained dormant. However, four industries applied for operation under the basic pact, a code was approved for the malt industry, important rulings were made with respect to payment of labor and hearings were held on proposed code changes.

The industries wanting to operate under the basic code include baking powder, food desserts and dessicated coconut manufacturing and chicken packing. Each of these has asked that some modification of the basic code be permitted to meet the conditions peculiar to the industry.

Nothing has been done to break the deadlock on the milk code. The industry still will have no part of its provisions and the Administration refuses to drop the matter.

The malt industry code became effective Jan. 7. It prohibits unfair trade practices and contains NRA wage and labor provisions. It provides for a code authority of seven members, five of which will be members of United States Maltsters Association. It also stipulates that the Secretary of Agriculture may determine minimum prices in an emergency.

Cottonseed millers, after trying for

more than a year, have gotten from the AAA a proposed code of fair competition. It provides for optional seed grading and price reporting. A hearing will be held on this before it is made effective.

All industries are affected by a recent labor ruling of the National Industrial Recovery Board. This requires that employees be paid for standby service when their work is interrupted for reasons beyond their control. It applies to such delays as breakdowns and time spent in waiting for materials. Also affecting wages is an NRA interpretation requiring that piece-workers receve not less than the minimum hourly wage.

After a hearing on the petition by restaurants to be exempted from the baking code, the Industrial Appeals Board asked the industries concerned to work out their own solution. If a settlement is not reached by Feb. 15, the board will make definite recommendations.

Various amendments designed to take the kinks out of the fresh oyster code were heard by NRA last month, as were amendments to the blue crab and California mackerel processing codes.

Nineteen mayonnaise manufacturers have been freed of code costs. By order of Administrator Armin W. Riley, any mayonnaise manufacturer whose annual dollar volume is less than $4,000 may apply for exemption from code contributions.

New Code Personnel

NRA HAS APPROVED recent appointments to the code authorities of the pickle-packing and canned salmon industries. The new code executives are as follows:

Pickle Packing—H. B. Blandford, Blandford Pickle Co., Freemont, Mich.; F. O. Brown, Squire Dingee Co., Chicago; J. A. Miller, W. & W. Pickle & Canning Co., Montgomery, Ala.; W. J. Scherer, J. J. Scherer Sons, Irvington, N. J.; A. E. Siessmen, Lutz & Schramm Co., Pittsburgh, Pa.; M. E. Wagenheim, California Conserving Co., San Francisco; Major Philip Matthews, H. J. Heinz Co., Pittsburgh; Charles Schlores, Mrs. Schlores, Inc.; and H. W. Dawdy, Onalaska Pickle & Canning Co., Onalaska, Wis.

Canned Salmon—H. B. Friele, Nakat Packing Corp., Seattle; A. H. Bradford, Lowe Trading Co., Seattle; William Timson, Alaska Packers Association, San Francisco; A. W. Wittig, Shepard Point Packing Co., Seattle; D. W. Branch, Libby, McNeill & Libby, Seattle; W. F. Scholthan, Beegle Packing Co., Ketchikan, Alaska; C. J. Sebastian, Sebastian-Stuart Fish Co., Seattle; W. L. Thompson, Columbia River Packers Association, Astoria, Ore., and A. L. Gile, Chinook (Wash.) Packing Co.

Biscuit Workers Strike

FOOD INDUSTRY labor troubles last month were high-spotted by the tie-up of three plants of National Biscuit Co. Involving about 3,000 workers, the strike started in the Philadelphia plant on Jan. 8 and spread to the New York and Newark plants where sympathy strikes were staged. When FOOD INDUSTRIES went to press, the Newark plant was again operating at full capacity, but no settlement had been reached at the other two plants.

HEADS GRAIN DIVISION

A. J. S. Weaver has been assigned to the job vacated by Frank A. Theis, chief of the grain processing section of AAA. Mr. Weaver helped to formulate the Administration's initial grain policy, served as chief of the sugar and rice section and subsequently was director of program planning. Mr. Theis by choice is back in industrial harness as vice-president of Simons-Shields-Lonsdale Grain Co., Kansas City.

The Philadelphia workers walked out in a protest for higher wages. This despite the fact that they had agreed last summer on rates of pay that were to continue for a year.

As a result of the strike, which involved all production employees and drivers, the company suffered spoilage of doughs, sweet goods and other products. And to produce enough goods, it was necessary to operate the Chicago plant on three shifts.

Relief Beef Buying at End

RELIEF purchases of cattle were practically wound up last month by AAA. Of a $115,600,000 fund, $106,125,300 had been expended as of Jan. 17, and most of the remainder committed. This represented the purchase of 7,827,821 head of cattle in 24 states at an average of $13.56 per head. Of those purchased, 1,378,000 were condemned and 4,632,835 were shipped. Of the shipped stock, 3,179,290 were slaughtered and turned over to the Federal Surplus Relief Corp., while upwards of 1,000,000 were put into pasture.

There is, however, a possibility that more funds may be forthcoming for cattle buying, inasmuch as the AAA would be given $60,000,000 to bring the price of beef up to parity under terms of a joint resolution introduced by Representative Ferguson of Oklahoma.

Among the dairy products purchased for relief last month, there are two new types, evaporated milk and dry skim milk. Of the former, 37,618,800 lb. were contracted for; of the latter, 3,081,250 lb.

Code Budgets

NRA HAS APPROVED a code budget of $244,722 for the wheat flour milling industry for the period from Oct. 1, 1934, to Oct. 1, 1935. And application for approval of budgets has been made by the pickle-packing, coffee and imported-date-packing industries. The pickle packers ask for $20,000 for the year ending Nov. 30, 1935. The coffee industry wants $25,000 for the period, Feb. 6 to June 16, 1935, with a supplemental budget of $3,000 for the year ending Feb. 6, 1935. The imported-date packers budget their code expenses at $9,900 from Jan. 1 to Dec. 31, 1935.

Concentrates

PRESIDENT ROOSEVELT on Jan. 17 ordered a 50-per cent reduction in the tariff on beer, in return for which Germany and Czechoslovakia are supposed to import more American lard . . . Reciprocity trade negotiations are under way with Canada, Netherlands, Finland and Italy . . . The Federal Trade Commission's investigation of the milk situation in Connecticut is said to have revealed a complicated method of price fixing.

THE Department of Agriculture's investigation into alleged price fixing by twelve major packing companies, begun last February, has been resumed in Birmingham . . . A proposed marketing agreement for the red sour cherry industry has been drafted and hearings on it are being held . . . An amendment to the cocoa and chocolate manufacturing code permits sales to the government without regard to code provisions on pricing.

IMPORTERS now may request certification that full-duty sugars are within established quotas after the sugar is purchased rather than upon its arrival in the United States . . . Five shipper members of the control committee of the marketing agreement for Florida citrus fruit have been removed as a result of violations of the agreement and license . . . Extension of the New York milk control law to shipments of milk from outside the State is urged in a resolution sent to Washington by the New York legislature.

REGULATIONS to conserve Alaska salmon have been approved, prohibiting commercial fishing during the red-salmon season in Bristol Bay . . . Recent tests indicate that it is better to store poultry in air than in carbon dioxide; also that carbon dioxide cannot be regarded as an inert gas in relation to fats.

NEWS ABOUT COMPANIES

Food Industries

ARMOUR & Co., Chicago, has leased the plant of Hauser Packing Co., Los Angeles, for five years. The Hauser plant has been packing about 50,000,000 lb. of meat per year.

BOOTH FISHERIES Co. has dropped its suit for an accounting against Perry L. Smithers, former president of the company, an investigation having absolved him.

T. L. BRICE Co., Sherman, Texas, has purchased the pickle business of Mennig-McCord Co., Des Moines, moving the equipment to Sherman. The Brice company already has contracted for 800 acres of cucumbers for 1935.

BURRUS MILL & ELEVATOR Co., plans to construct near Fort Worth, Texas, a mill with a capacity of 3,600 bbl. daily. A 300 bbl. corn mill also will be installed and a 500,000 bu. elevator erected.

CAMPBELL SOUP Co., Camden, N. J., has taken over the old Franco-American Co. packing plant in Jersey City, N. J., but will not operate it.

COCA-COLA Co., Baltimore, will construct a large one-story addition to its plant, this to be 216x358 ft.

COMMERCIAL SOLVENTS CORP., in association with Corn Products Refining Co., is taking over the business of Molasses Products Corp. and Dunbar Molasses Corp.

CONSUMERS' CITRUS SUPPLIES Co., INC., has opened a $25,000 packing plant in Jacksonville, Fla. George W. Glaabe is manager.

CUDAHY PACKING Co., recently put into operation a new butter manufacturing and packing plant at Nashville. The plant also will pack eggs.

DUGAN BROS. of New Jersey, Inc., have taken over management of the New York Dugan Bros., Inc., with David H. Dugan, Sr., acting as president of both companies E. J. Dugan, who headed the New York company, has become treasurer of it.

FLEISCHMANN MALTING Co. has almost completed a $135,000 reinforced-concrete addition to the storage and elevator workhouse facilities of its Chicago plant.

WILLIAM H. FOCKE SONS Co., Dayton, Ohio, has experienced such an increase in business in the last six months that it is making $20,000 worth of improvements in its packing plant.

GLOBE GRAIN & MILLING Co., Los Angeles, announces a new packaged cake flour and reports an increase of 300 per cent in sales of packaged goods during 1934.

GRANITE STATE ABATTOIR, Manchester, N. H., soon will start work on a new packing plant.

H. J. HEINZ Co. is constructing a new warehouse and distributing plant at Louisville.

HYGRADE FOOD PRODUCTS CORP., New York, recently purchased the packing plant and business of A. Fink & Sons, Newark, N. J.

IGLEHEART BROTHERS, INC., has opened a flour blending and distributing plant at Jacksonville, Fla.

JOHNSON (ARK.) CANNING Co. will build a tomato canning plant at Weslaco, Tex.

LACHOY FOOD PRODUCTS Co. has taken over the Weiland factory at Oak Park, Ill., and moved its Chicago plant to that location. D. G. Bishop is manager.

MCCORMICK & Co., Baltimore, recently distributed to its employees bonus checks totaling 5 per cent of the net profits for 1934.

SAN FERNANDO HEIGHTS ORANGE ASSOCIATION is building a new orange packing house, to be completed in April, which will almost double its capacity.

SHEFFIELD FARMS Co., New York will carry out an extensive modernization program in 1935, spending $1,000,000 on five of its plants. This company believes the depression is over.

SOUTH LEBANON PACKING Co., New Vienna, Ohio, has sold its corn canning plant to a company headed by H. G. Bates.

ST. LOUIS DAIRY Co. will construct a $125,000 addition to its plant.

SWIFT & Co., Chicago, reports that "it has not often been in the history of our company that our annual report has reflected so decided a change in the trend of affairs as did our last one." Swift made a profit of $11,400,000. The company is remodeling and enlarging its plant at Kearney, Neb.

TOBIN PACKING Co., Fort Dodge, Iowa, began operations at its new $400,000 plant recently. More than 7,000 hogs will be processed weekly.

UNITED DAIRIES, INC., Detroit, has bought the plant of Metropolitan Dairy.

WALKER CANDY, Co., Ososso, Mich., is to be sold at public auction Feb. 26.

Associated Industries

AMERICAN CAN Co. announces changes in its packers' cans sales organization. A. H. Nugent becomes assistant general sales manager with headquarters in New York. J. J. Lynch and E. S. Renolds have been appointed district sales managers in Chicago and Rochester, respectively.

CONTINENTAL CAN Co., INC., will erect a $500,000 can manufacturing plant at Elwood, Ind.

COPPUS ENGINEERING CORP. has appointed Ernest E. Lee Co., Chicago, to handle its equipment.

ILLINOIS STEEL Co. announces appointment of Griswold A. Price as sales-manager in its St. Louis district.

LIQUID CARBONIC CORP. has built a new gas and Dry Ice plant at Norfolk, Va. W. R. Wiggins is manager.

MINNEAPOLIS-HONEYWELL REGULATOR Co. and Brown Instrument Co. have consolidated, the latter becoming a subsidiary. Both companies will maintain their own identity in the sales field.

NATIONAL CODE INSTITUTE has been formed with headquarters in New York to handle industrial code problems and to represent industrial firms in code matters.

REO MOTOR CAR Co. has promoted Ward W. Mohun to assistant sales manager and has placed E. W. Stephan in charge of all Reo branches in the United States.

DEATHS

C. F. BURGER, 53, president of Burger Creamery Co., Detroit, Jan. 1.

JAMES CLARK, 56, president of Clark Candies, Inc., Baltimore, and a candy manufacturer for 36 years, Jan. 5.

R. DORSEY, 49, vice-president of Coca-Cola Co., at Atlanta, Jan. 11.

MAX GOLDMAN, 66, president of Perth Amboy (N. J.) Beef Co., Jan. 12.

LOUIS G. HELWIG, vice-president of Helwig & Leitch Corp., Baltimore, recently.

FRANK D. KELLOGG, 75, senior member of Kellogg & Buick Milling Co., Morenci, Minn.

FREDERICK PERRY, president, Canadian Macaroni Co., in London, Jan. 7.

FREDERICK GUSTAVE STAUDT, 65, founder of Staudt's Bakery, Raleigh, N. C., and a baker for 40 years, at Raleigh, recently.

CLAUDE E. STOWE, secretary and treasurer of Borden's Farm Products Co. of Michigan, at Detroit, Jan. 11.

CHARLES WEGNER, assistant treasurer of Cracker Jack Co., Chicago, recently. He was with that company 30 years.

JOHN J. WILSON, 71, manager of Columbia (Tenn.) Canning Co. for 33 years, recently.

PATENTS

Coating Fresh Fruit to Prevent Shrinking—Ernest M. Brogden, Pomona, Calif., to Brogdex Co., Winter Haven, Fla. Nos. 1,985,238 and 1,985,239. Dec. 25, 1934.

Eggs Broken and Separated Mechanically—George F. Giveen, Sioux City, Ia. No. 1,985,320. Dec. 25, 1934.

Citrus Fruit Forced Through Throat-like Unit to Squeeze out Juice—Thaddeus Dale McCall, Imperial, Calif. No. 1,985,323. Dec. 25, 1934.

Condensed Milk Added in Small Quantities to Milk to Stimulate B. Acidophilus Activity—Stewart M. Farr, to Brook Hill Farm, Inc., Genesee Depot, Wis. No. 1,985,490. Dec. 25, 1934.

Margarine Containing a Partially Saponified Fat Ingredient—Benjamin R. Harris, Chicago, Ill. No. 1,985,496. Dec. 25, 1934.

Lactobacillus Products From Fruit and Vegetable Juices—John Reichel and Harry A. Cheplin to Sharpe & Dohme, Inc., Philadelphia, Pa. No. 1,985,622. Dec. 25, 1934.

Continuous Strands of Macaroni From Molding Press Automatically Gathered Into Bunches on Racks and Cut Into Desired Lengths for Drying—Francesco Mariani, New York. No. 1,985,574. Dec. 25, 1934.

Means of Applying Wax-like Materials to Fresh Fruit in Preparation for Market—Bronson Cushing Skinner, Dunedin, Fla., to Brogdex Co., Winter Haven, Fla. Nos. 1,985,842 and 1,985,843. Dec. 25, 1934.

Fresh Fruit Given Alkaline Bath Treatment Before Coating With Wax-like Material—Miles L. Trowbridge, Pomona, Calif., to Brogdex Co., Los Angeles, Calif. No. 1,985,846. Dec. 25, 1934.

Three-Stage Heating System for the Manufacture of Salt—Milton J. Gearing and William F. Downing, Jr., St. Clair, Mich., to General Foods Corp., New York, N. Y. No. 1,986,334. Jan. 1, 1935.

Canned Sweet Potatoes, Southern Style—John H. Stansbury, Fruitland, Md., one-half to Ralph O. Dulaney, Fruitland, Md. No. 1,986,543. Jan. 1, 1935.

Honey Candy

(Concluded from page 61)

addition of some material such as corn syrup which contains a considerable percentage of dextrins. Those who desire fondants high in dextrins should have their wish fulfilled, but this peculiar interrelationship of honey to milk sugar is, at least, one way to control crystal size.

The tendency of milk sugar to form crystals readily is, of course, well known as lactose is not as soluble in water as are most common sugars. At ordinary temperatures it is soluble in the ratio of approximately one part to six parts of water, whereas dextrose is soluble in an approximate 1:1 ratio. Cane sugar is still more soluble and levulose is the most soluble of all sugars in the ordinary human diet. This greater tendency of lactose to form crystals brought up another problem which was not easily solved. In honey-lactose fondants, which are always smooth and quite soft at first, there was a tendency for crystal formation to proceed after the fondant was finished, sometimes resulting in candies that were too hard.

Solution of this difficulty was not easy. However, Miss Stratton observed that her otherwise finished fondant would absorb a relatively high per cent of whole sweet milk merely by mechanical mixing. This milk of course became part of the liquid phase of the fondant and tended in turn to reduce later crystallization of the milk sugar in the original liquid phase.

On first thought it might appear dangerous to work uncooked whole sweet milk into a fondant lest it might ruin the candy by souring. But honey is also an unusual preservative and in this mixture the milk remains sweet as long as one may wish to keep the candy.

In addition to the fondant already mentioned, hard candies which do not become sticky have also been made of honey and milk sugar. In these of course no whole milk is added. The various formulas have been made up into confections of about every conceivable form, from 5-cent bars to de luxe boxes containing a variety of forms and pieces. The honey fondant blends readily with almost any flavor desired, and now that whole milk is added, there is no discoloration of the chocolate coating as usually occurs when honey is used in the centers.

Depreciation

(Concluded from page 60)

asset values and a corresponding amount for the depreciation reserves.

Once the task has been completed a program should be established for examining and verifying all the inside equipment of a different department each year so that in a cycle of less than five years all will have been checked. Naturally, the truck fleets and other equipment kept outside the plant need shorter periods of verification. Thus the trucks should not be written off on the basis of 25 per cent per year, but at the end of each year the garage man ought to determine the future usefulness of the truck. He can state in a report whether it is in excellent, good, bad, poor or worthless condition. With this information, the cost accountant can determine the true net value of the asset and accordingly provide the depreciation.

For a time, many food companies found it expedient from a cost accounting angle to figure depreciation every month on each unit of equipment. Today, however, with the question of allowable deductions under income taxes being the major consideration, most food plants compute their depreciation annually. This basis of annual computation lends itself to the review of the remaining useful life of the asset under the arrangement that is now recommended.

Another feature that has come to the attention of cost accountants in the food industries is the lack of information on the true insurance coverage needed for various types of equipment. Generally, no summaries are available as to the loss that may be sustained through fire. This applies particularly to brick ovens in bakeries, refrigerators in ice cream plants and holding vats in certain other industries. Nor have corporations given much thought to the question of obsolescence and inadequacy, which elements in food industry equipment loom most important and are least controlled.

It is true that depreciation as a cost of doing business may run from 3 per cent to 10 per cent of net sales while the cost of ingredients and supplies amounts to anywhere from 30 per cent to 60 per cent. Yet it would seem that a bit more time spent on the correct computation of this depreciation would be warranted, with possibly a little less attention to the periodic calculation of inventories with their pricing to the fourth decimal place of a cent. This, of course, is entirely from a cost angle. But from the viewpoint of the financial balance sheet it should have consideration, because the capital assets may amount to 60 per cent of the total capital, whereas inventories, particularly in the food industries, with their rapid turn-over, are no more than 20 per cent. On this basis, a more exact computation of the remaining useful life of the capital assets certainly is justified.

Tax attorneys and financial accountants can question Treasury Decision No. 4422. They may feel that its rulings cannot be complied with. But the cost accountant sees it as an aid to better record keeping and cost finding whereby industry will build a sounder economic and financial structure.